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OF

ANOMALOUS DEVELOPMENT

OF

TUBERCLES,

COMMENCING AT THE BASE OF THE LUNG AND GRADUALLY EXTENDING UPWARD; WITH THE PHYSICAL SIGNS OF PNEUMONIA. ANALYSIS OF THE CASES: DIAGNOSIS, PROGNOSIS, PATHOLOGY, &C.

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READ BEFORE THE BOSTON SOCIETY FOR MEDICAL OBSERVATION, FEBRUARY 20, 1855.

BY HENRY I. BOWDITCH, M.D.

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FROM THE AMERICAN MEDICAL MONTHLY.

NEW YORK:
EDWARD P. ALLEN, 9 SPRUCE STREET.

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Anomalous Development of Tubercles.

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BY HENRY I. BOWDITCH, M.D.

[From the American Medical Monthly, July, 1855.]

Case I.—I. H., a stout young apothecary, aged 22. I saw him Jan. 2, 1842. He had had a cough for three weeks, dry at first, but for ten preceding days it had been looser, with frothy sputa. It had, however, never been very troublesome. He had been occasionally liable to "slight colds," during the preceding years, and transient pains in the chest, but he had not thought himself ill. The day before my visit he had been seized with an acute pain in the region of the heart, preceded by chilly feelings several days before, and for which he had kept the house during the greater part of the time. No distinct febrile paroxysm. No diminution of strength or flesh. He in fact considered himself as only slightly ailing, and I was summoned solely on account of the pain in the side. His digestion had been good. At my visit, he was sitting up, and looked not very ill; he had no marked dyspnœa, or any manifest sign of serious internal lesion. Pulse 96 to 100. A dull pain only

was felt on a full breath, in the left breast, *near the cardiac region;* and upon auscultation there I found *a fine crepitus râle* over a space about the size of the palm of the hand. I regarded the case as one of mild and very local pneumonia. I prescribed two leeches, to be followed by a poultice. Dover's powder and jalap.

Jan. 9th: Had improved. The crepitation had lessened somewhat. It had, however, persisted from the first moment that it was noticed, but there had *never been any hepatization*, as in pneumonia. Little or no fever; cough less; sputa easy, greenish. At times, slight transitory pains in the right chest; bowels costive.

Feb. 17th: Had been gradually getting more ill, although he had been able to walk out. On percussion in front there was a decided difference of note in favor of the right breast; fine crepitation at left; voice resonant at both apices; patient felt faint and weak. A pill of acet. morph., ipecac. and aloes was ordered; p. r. n. Patient went to the country.

March 10: Returned no better, but with all the signs of evident phthisis. Bruit de pot felé where crepitation had been heard. Dull percussion of left breast; cavernous respiration and pectoriloquy at the top of the right lung.

He continued gradually sinking, and died the last of May or first part of June.

It will be remarked that this patient, after having had occasionally simple "colds," was suddenly taken with pain in the left breast, and although there were none of the characteristic marks of pneumonia, prostration, rusty sputa, &c., the physical sign, *crepitation of a minute character, and heard towards the lower parts of the lung, lasted certainly from Jan. 2d until Feb. 17th*, and probably some days longer, and finally terminated in softening of the lung and an excavation.

Case II. Sept. 5th, 1843: A. B., dry goods seller, aged 22. Had experienced some dyspeptic symptoms for six months, and for two months had had slight cough, but no pains in the chest and no fever. He had in fact felt well enough to be engaged in his business on the afternoon of the 5th. An hour before I

saw him he had had hæmoptysis, of several sputa. No other serious symptoms.

The chest resounded well, and the respiratory murmur was everywhere heard; nowhere tubular, but at the tops of both lungs, particularly at the left, there seemed as if a mucous râle were about to be produced. Voice, slightly resonant just below the top of the left shoulder.

Pill of gr. ss. opium and 2 gr. acet. plumb. ordered.

On the following day he seemed quite well, and started for ———, on a visit to his father's house, in order to rest.

Oct. 2d, I saw him again. While at his father's he had had copious hæmoptysis, but after that regained his strength, and seemed to be improving in every respect, when, on the 27th of September, he was seized with chills and soreness of the chest, and afterward became more ill. At my visit he looked thin, his skin was cool, pulse 72, slight sweats at night, appetite lessened. Occasional cough; lying on the left side increased it; no severe paroxysms, but he hawked often; he felt very weak.

Physical signs: Rude respiration under left clavicle; a little tubular on the top of shoulder. But the most marked sign was a bronchial respiration, bronchophony, crepitous râle, and dulness on percussion throughout the *lower third of the back;* right top perfectly normal.

℞. Mist. ferri comp. f.℥ss. t. i. d.

Oct. 4th:—Cough more urgent; auscultation of back as before.

Two leeches to side, and repeat, if need be, day after to-morrow.

℞. Morph. acet., gr. iv.
Pulv. rhei., ʒss.
F. pil. xx. One night and morning.

Oct. 22: There was a slight crumpling at the apex, but the most marked sign was the fine crepitus, as before, on coughing, but no distinct bronchial respiration or bronchophony. He reported that subsequent to the last examination he became worse, and had had pains about the chest, and grew thin, but

that since he had been improving. At the time of my examination, he had scarcely any more than a simple hemming; no severe cough; less dyspnœa, though it was still decidedly manifest on going up stairs; digestion perfect; no hectics.

He was preparing to go South. This he did, and June 26, 1844, I again saw him.

He had spent six months in the pine regions of Georgia, hunting and fishing, and had at times ridden forty miles daily. During the whole period of six months he had had no trouble, save occasionally a little cough. During his passage home he began to emaciate, and felt ill. In April, a tendency to diarrhœa commenced, with oppression after food, with some slight febrile paroxysms. No dyspnœa except when lying on the left side; slight hæmoptysis after his return North, as he thought, from the fauces, which were sore, and looked varicose. He had gained flesh while at the South, which he had lost after his return.

Physical signs: Percussion everywhere good; clavicles prominent; crackling in the left breast, and back, even to the base.

I put him upon a careful semi-tonic diet, with a glass of port wine daily. Sponge bath daily.

Aug. 8th: I again met him. He had improved very much in his health, and his whole aspect was much better. He was preparing to spend another Winter in the South. *Still some fine crepitous in the lower part of the back* on coughing. He had employed Dr. Ramadge's inhaling tube with great relief; he could breathe easier after using it.

Having spent the Winter in Alabama, and thinking himself almost or quite well, he returned North in the Spring of 1845. I saw him July 30. He had attended to his business, but had always had a slight cough. In December a fistula in ano occurred. He looked paler and thinner than I had ever seen him. The physical signs had become manifest in the apex of the right lung; the whole of the left was involved, and a fine crepitus mixed at times with coarser râles, was heard in the lower two-thirds of that lung.

He died not long afterward.

This case is analogous to the preceding one. A young man,

aged 22, was seized, after having been but slightly unwell, with severe symptoms, and the *most marked physical sign*, at the second examination (and probably the same would have been found at first had a more thorough exploration been made), *was a fine crepitation heard in the lower part of the left lung*, whence the disease extended upward and to the upper part of the left lung. The physical signs, at first, were those of pure pneumonia. Yet the crepitus lasted more or less manifestly from Oct. 2, 1843, to July, 1845!

Case III.—The Rev. Mr. D., a clergyman residing in New Hampshire, aged 24,—very earnest and devoted to study. He entered my room, looking quite well, Dec. 14, 1849. His health had been good, except some aphonia during the previous Spring, which was wholly removed by the amputation of his uvula, after which he was well till three weeks before I saw him. Then he had a slight cough, preceded some weeks before with trivial, pricking, pains in the thorax, always coming on after sitting for some time, and relieved by walking. Slight sweating at night after the cough commenced. No expectoration till the day before I saw him, and then he had had a little hæmoptysis, which he thought came from the right lung. Some loss of flesh, but not of strength. His appearance on examination was that of a rather slender person, but bright and active as if not suffering from any severe disease. No apparent dyspnœa. Pulse somewhat quickened. In front, I heard indistinct bronchial respiration, and bronchophony about the third rib of the right breast, and behind the same signs were very distinct from the spine to the angle of the scapula; while *below the angle there was the most minute crepitus*, on full breath.

Though the physical signs were evidently those of pneumonia, the whole of the rational signs, their slightness,—above all, the perfectly healthy and easy appearance of the patient,—prevented me from regarding the case as one of common, acute, pneumonia. I remembered the two cases already named, and feared an acute, latent, and anomalous deposit of tubercle.

Dr. James Jackson saw the patient in consultation, and fully agreed with me. Nevertheless the physical signs were so like

pneumonia that it was determined to use an antiphlogistic course:

℞. Hyd. sub. mur. gr. 1.
Opii. gr. $\frac{1}{4}$.
Ant. Tart. gr. $\frac{1}{8}$.

were prescribed every night. Vegetable diet.

Dec. 19th: Reported more pain in the right side,—more sputa, yellow and adhesive. Felt very weak. Respiration 28. Pulse 112.

The sub-muriate was carried to the point of producing a slight sore mouth, and all the usual treatment of pneumonia pursued without the least benefit or change except for the worse. Finally, cod liver oil was directed, about Jan. 14. Extract of lactuca ordered instead of opiates.

Jan. 21st: The report was as follows: Very great tubular respiration, between the spine and angle of the scapula; râles as before, below the angle. Dyspnœa still marked, on exertion; and pulse very quick. Otherwise he felt better, and seemed rather less emaciated. Digestion, good. Sleep, good. Cough, a little in the morning; expectoration, of a greenish hue, and very small in quantity.

Feb. 5th: Symptoms as above, except that there was more cough, but it was dry.

About this period he had a feeling of obstruction in the left ear, and it became so troublesome that I invited Dr. Clarke to see him (March 6th), who, upon a thorough examination, found no evident trouble. Glycerine was ordered, but without avail. He became weaker, daily. His cough was still slight; he had no pains in his chest; his chief trouble was a slight salivation, which he attributed to the calomel; he was more costive. No hectic.

Feb. 27th: Kept awake by slight pain in left side, at times. Generally, as before, except more emaciated, and vomited usually after food; some œdema of the legs.

℞. Morph. acet. gr. iii.
Aloes, ℥ss.
in pil. xx. 1 at night.

April 16th: *Extremely* thin: ulceration of the right cornea; cough more severe; œdema greater.

℞. Collyrium of sulph. zinc, gr. vi. ad. aq. f.℥ij.

April 20th: He died, after very little suffering, and slight cough.

During the latter part of life he felt as if the right side of the chest had died; his mind was perfect until the last moment; his expectoration was slight till the last few weeks of life, and rather by hawking than coughing; no hæmoptysis. Digestive organs, well. The ulcer of the cornea nearly deprived him of sight.

Autopsy on the 21st. Great emaciation. Right lung firmly united throughout its whole extent to the pleura costalis. Upper lobe wholly riddled by a large ragged excavation containing pus and tuberculous matter. The lower lobe had a dense feel, and on cutting it open, it presented a perfectly solid structure, containing common tuberculous matter and something that resembled chronic pneumonia. These two conditions were found in every part of the lobe; not a particle of air could be perceived. At times this gray dense substance surrounded the tubercles. Some small cavities containing pus were seen, but they did not communicate with the bronchi.

The other lung collapsed freely on raising the sternum; a few adhesions only at upper part. Generally, this lung had the healthy pink hue. At the apex were one or two gray tubercular masses. The lower lobe was diseased in a slight degree, as the lower lobe of the other lung, *i. e.*, a few tubercles with a dense structure around; no cavities containing pus.

Head—Internal ears, healthy. The abdominal organs looked healthy.

Resumé of the case. A young man was taken suddenly with slight hæmoptysis, after having been only slightly unwell. None of the rational signs of acute pneumonia, and yet the physical signs exactly corresponded with the first and second stages of that disease. Though active antiphlogistic treatment was first adopted, and subsequently the usual treatment for phthisis was followed, neither plan had any influence toward checking the onward career of the complaint. In fact, it may well be doubted whether the antiphlogistic course was not actually deleterious. Certainly I should never recommend the same again in a

like case. The physical sign of *crepitation at the lower portions of the lung* lasted over three months and a half.

Case IV.—Mr. H——, aged about 30. Not wholly well for two months, but very actively engaged as a merchant in a large jobbing house of this city. I saw him in consultation, March 25, 1854. I learned that, on a visit to New York on business, he was exposed to very severely cold weather, particularly in an open sleigh on his return. He had been chilly every night on retiring to rest. On his return to Boston, he felt as if he had taken a bad cold; he had lost his appetite, and his strength was less, although he was quite able, and determined to be at work. In a few days, however, his cough was so urgent, and his symptoms became so manifest, that by directions of the attending physician he kept at home. At my visit, I found him in bed. He had however been up, daily. His pulse was rapid; his cough, violent; his expectoration, thin, glairy, small in quantity,—never bloody; he was very nervous, and evidently much excited about himself. The physical signs were *a fine explosion of crepitus râle in the lower third of the right back*, and the respiration was less clear throughout the whole back, even at the top, *though evidently the chief obstruction was at the base.* A faint rubbing was heard on full breath. The attendant physician informed me that when the patient first called at his office, after his return from New York, he seemed like one who had been running violently, he panted so much. The physical signs were some dulness in the part above named, and sibilant and sonorous and loud mucous râles. His physician regarded the case as bronchitis, in consequence of exposure, which had gone on toward hepatization. The patient wished to go out, but he was required to keep his house. He had used calomel internally, and croton oil externally. The dulness had steadily but slowly augmented, and at my visit was more than at any time before. I suggested the probability of acute phthisis, advised blistering, the omission of calomel, &c., and of depressing treatment, and the use of the cod liver oil. I requested that Dr. Jackson should be consulted. That gentleman saw the patient a few days afterward, and was, I believe, inclined to view the case in the same light as I did. He however request-

ed another examination. Mr. H——— became very anxious about his health, and declined allowing any further auscultation.

He spent the Summer in the country; grew fat on cod liver oil, but his cough did not cease, the dyspnœa rather augmented, and in the Autumn he had a fistula in ano. The attending physician informed me that there were signs of a cavity in the lower lobe. In other words, it seemed from the long continuance of the disease (eight months), and from similarity to the two others already given, that it was another example of peculiar, anomalous, tubercular disease, commencing in crepitous râle at the base of the lung. This patient is still alive, and has undergone two very serious changes since that period. His fistula still remains open. He is considered a permanent invalid, and has done no business since his first attack. Last Winter he was suddenly seized with signs of pneumothorax of the affected side, with tympanites, resonance on percussion, absence of murmur. From the immediate effects of this attack he slowly recovered, and, instead of air, a large quantity of serous yellow fluid was effused; six pints of which I removed, with great relief to the patient, in May, 1855. I used the same apparatus mentioned by me in my paper, given in the *American Journal of Medical Sciences* for April, 1852, and in a former number of the MONTHLY. Nothing but the most pleasant results followed the operation. Now (June 6, 1855) he walks about, does not attend to business, but occasionally visits his warehouse. The fluid has shown no tendency to return, but he has great dulness of right breast, and a distinct dry tubular respiration and bronchophony; also some vocal resonance at the top of the left back. No crepitation, but only an obscurity of respiration at the lower parts, where crepitation was heard last year.

Resumé. A most interesting and important case! Taken a little more than a year since, with the crepitation as in previously described cases. This patient has gone through three of the most serious accompaniments of phthisis, viz: fistula in ano, pneumo-thorax, and pleurisy, with effusion; for the latter of which a puncture was made, with complete relief to the symptoms depending on that state of things; and now, *finally*, he

presents the usual signs of condensation at the apices of both lungs. He is however better than for some time, but has evident dyspnœa and emaciation. He falls into the same category with case VII.

Case V.—Aged 20. A collegian the last two years, and a scholar in Boston before. Residence at W———. Always puny, but never really ill; easily fatigued by exercise, but able to walk six or eight miles daily. Has usually walked much. Never liable to cough; digestion, good. I saw him July 21, 1854.

For weeks before visiting me, he had had some pain in the right chest, but had been relieved. He had been very much occupied in preparing for a collegiate exhibition, in which he had felt a deep interest. For a few days he had felt weak, owing, as he thought, to the prevalence of an East wind, and the day before I saw him he had a tickling sensation at the bottom of the sternum, and gradually a soreness came on, low down in front of the chest. Otherwise he felt in perfect health. On the day this soreness commenced he spent a long time in the woods repeating, in a loud voice, the exercise he had prepared for exhibition. He used port wine as a gargle, and gradually the soreness, or burning pain, fastened upon the epigastrium. It increased as the evening advanced, but he awoke free from all trouble the next morning. By resuming his daily labors it was reproduced. Digestion usually in tolerable order, but a little costive. Dejections every second or third day. Never any acidity. No chills, heats, or sweats. Urine darker than usual, and it had a strong odor and a sediment.

As he entered my room, he looked rather frail, but well. Tongue clean; appetite good. His respiration was easy; soreness prevented at times a full inspiration; he had also, occasionally, a dull pain in the back. He felt somewhat restless, without any evident cause. Pulse 72; skin normal. The rational signs were in fact so small that I should not have thought it necessary to examine the thorax of the patient, had he not visited me solely for that purpose. The physical signs were as follows:

Inspection good. On percussion, difference of pitch on lower third, front and back, it being a little *higher* at the left than at

the right. By auscultation was heard *a very minute crepitation throughout the lower third of the left*, corresponding exactly to the higher note.

From the physical signs it was plain that there was a congestion of the left lung. The rational signs set aside wholly the idea of pneumonia. I could not but be reminded of the preceding cases of phthisis. I deferred my judgment, however, but ordered as follows:

He must keep quiet, give up all elocutionary efforts, have a simple diet.

℞. Pill Hydrarg, . ℈i.
in pil. iv. One every other night.

July 24th: On the day of this visit he was seized, while driving, with a severe pain in the left side. The motion caused him great agony. From that period he had had uncomfortable feelings at the top of the shoulder; but otherwise the symptoms were as before. Physical signs identically the same as three days previously.

Croton oil to the chest. Keep quiet.

July 29th: While driving to my office he was again seized with a pain in the side, so that he had to rise in the carriage in order to avoid the jolting, He was very costive, in spite of Rochelle powders and injections. Exertion produced heat in the side and along the sternum. On the night of the 28th he had a little hemming, but no cough and no sputa. Breathing a little more difficult. Pains in both sides, at times, on full breath, and unpleasant feelings there all the time. No hectic. Appetite indifferent till he commenced eating, then it became voracious. Aspect as good as at his first visit. A slight hem occasionally noticed during examination.

Crepitation perhaps a little coarser behind, but heard from *one inch above the angle of the scapula, and in front from an inch below the nipple, to the base of the lung.*

Extract Colocynth comp., gr. v., every morning.
Advised the attending physician to use iodide potass. and leeches.

Aug. 23d: Had been worse. Ten days before, was visited

by a college friend; talked much and read aloud. He had increased heat about the chest, and was confined for two or three days. He had had four leeches, and had followed the prescription above given. Very little pain in the chest. Digestion better; bowels regular; face a little red; urine natural. "*Not a particle of cough;*" able to ride better; no trouble in coming into town; pulse 84; head well; no emaciation. *Crepitation terminated distinctly and abruptly in the middle of the back and at the nipple in front;* that is, it had extended.

Continue the same course, increasing the dose of the iodide.

A month subsequently, I learned that the physical signs were gradually augmenting, but the patient suffered much less pain, and had thrown aside all medicine and came into town to take lessons on the pianoforte. In a letter received the past week (June 17, 1855), the attending physician informs me that the disease of the lung is increasing.

Case VI.—I saw in consultation with Dr. C——, October, 1854. Dr. C. gave me the following account of the case:

G. A. H., aged 26, hardware dealer, salesman and traveller in a large firm. Married.

In February, 1854, he had an attack of "lung fever and pleurisy," from which, after a few weeks, he recovered so far as to be able to return to his business. His health however was far from perfect, but being active and "ambitious," he continued to perform full service through the remainder of March and April. About the middle of May, he was seized with a febrile attack, accompanied with a slight irritating cough and shortness of breath. He was confined to his bed only a day or two. The physical signs were chiefly the following: Great dulness on percussion over the lower half of the *right* lung, with bronchial respiration and bronchophony in the same part; some crepitation or mucous râle immediately above the dull spot, and at the very lowest portion of the *left* lung. The crepitation in both lungs gradually disappeared; the cough almost entirely left him, and the dyspnœa occurred only after exercise. His pulse fell to 80; his appetite was sufficient, and

his bowels were tolerably regular. No appreciable improvement took place in the right lung.

He was excessively uneasy under restraint, and wished to start on a "business tour" South and West. This being objected to, he dissolved partnership, and gave up his business connections. As he had in February been advised by his attendant physician to go to a milder climate, he now resolved to try a voyage up the Mediterranean, and on the 5th of June sailed for Malta. After considerable suffering and a bad voyage, he arrived there July 12th. He was told by an English physician that the lower lobe of his right lung was consolidated. After remaining two weeks, he returned home by way of France and England, and reached Boston Aug. 25th, about in the same condition that he was in when he left; certainly not improved. He was not confined to his house, but passed his time in visiting his business and other friends, walking moderate distances, and driving two or three miles, without much effect or inconvenience.

Sept. 6th: Twelve days after his return, he had hæmoptysis, and expectorated about one-half pint of fluid blood, and a noticeable quantity of frothy mucus. The hæmorrhage recurred the same day, and after an interval of two days took place two or three times daily for six days more. The whole number of bleedings was fifteen, and the amount discharged about five pints.

Treatment.—Rest, abstinence. Blisters. Acet. plumb. and opium.

Sept. 14th: Hæmoptysis ceased. Right lung, lower lobe, as previously; mucous râle and occasional clicks in the middle one-third; also in lower part of left. Respiratory murmur and percussion normal elsewhere. Considerable debility and sickly aspect from loss of blood, &c. Pulse 80, above which it never had risen except under temporary excitement.

Almost immediately on the cessation of the hæmoptysis, he began to have febrile paroxysms in the after part of the day and evening; at first very slight, but gradually increasing in duration and intensity; followed by sweats, which at last thoroughly drenched his clothing. The pulse rose to 90, and in a few days to 100; then to 110–15, and during the last week of

his life to 120–30. Respiration 34 to 40 per minute, varying during the same visit. The bowels became irregular, alternately costive and loose; the appetite was craving for more than could be easily borne. The *crepitation in the left lung gradually extended upward.*

Oct. 5th: Twelve days before death, I saw him in consultation, and observed as follows: On percussion there was less sound, generally at the right, and particularly so in the lower part of it. There was evidence of great obstruction in both lungs, at the lower portions. Cracklings coarse, at the right; *fine explosion of crepitus râle in the same part of the left;* above, something similar in both, mingled with a sonorous râle. Loud and rough respiration, but evidently the most pure that could be found, was perceived under the clavicles. Patient was very feeble, could not rise in bed without assistance, and was unable, owing to faintness and dyspnœa, to remain but a few moments in a sitting posture. The dyspnœa was very great and manifest. Patient spoke only in whispers, and preferred to write his wants. Pulse 122, feeble. Expectoration ragged opaque sputa and a watery fluid. Urine dark, slimy. Digestion good, though tending to irregularity of the bowels. Sweats, copious at night.

I learned from Dr. C. that the crepitation gradually extended, and finally by the 16th of October occupied the whole lung to its apex. Within a week before, a similar state was observed in the right lung. Percussion being unpleasant to the patient, was not persisted in. Flying pains occasionally in both chests.

Oct. 15th: Much blueness of nails; coldness of extremities; almost pulseless; dyspnœa intense.

Died in the evening of Oct. 18th, at 7½ o'clock.

An autopsy was made under great difficulties, at 3½ P. M., Oct. 21st.

Great emaciation.

On raising the sternum the lungs looked pale, but over the right were patches of thin old opaque false-membrane. This was found to extend over almost the whole of the organ. The two upper lobes were removed with comparative ease. The lower lobe was very firmly adherent, so that the pleura costalis was ruptured in raising that part of the lung.

The left lung was very slightly adherent, but chiefly in its lower half, by a more delicate membrane, the major part of it being of recent soft effusion.

The right lung was diseased as follows: Not a particle of the lower lobe was healthy, but it was broken down into a ragged cavity, having exactly the aspect of a common tubercular cavity, as found at the top of a lung. The walls of this cavity were from a quarter to half an inch thick, and it was traversed by numerous bands, all of which were dense and impervious to air. There were a few crude tubercles. The middle lobe was studded with crude opaque tubercles, and the interstices, though containing a little air, were denser than in health. At its lowest part there were a few small cavities, containing pus, and which had not communicated with the bronchi. In the upper lobe were a few small tubercles, but it crepitated and was healthy, except that it was very œdematous.

The left lung was covered on its lower lobe, and the lower part of upper lobe, by a delicate membrane, which was soft, recent, and of a deep, mottled red, aspect. The lower lobe was uniformly dense, as from pneumonia. The upper lobe was pale, swollen, and looked emphysematous; tubercles were easily felt in its interior. On incision of the lower lobe it was found everywhere solid, and of a mottled gray appearance, like the gray infiltration of tubercle, being less friable, less granular, and less purulent than pneumonia. A few opaque distinct tubercles in it. The upper lobe, on incision, showed many tubercles, *most numerous at its lower part, and gradually diminishing towards its apex, which was almost free from them, and was the most healthy part of either lung.*

Heart normal; left ventricle filled with soft, black, grumous blood; valves, all well.

Intestines, examined only in spots, seemed healthy. No ulcers near the ileo-cœcal valve. Mesenteric glands, well. Liver, medium size, healthy, dark. No tubercles seen in any of these organs.

It should be stated that, by two microscopists, tubercular corpuscles were found in abundance in the crude tubercles, and a few in the gray semi-transparent condensation of the left

lower lobe, and, on the contrary, none of the microscopic appearances usually seen in pneumonia.

The following may be the condition of the lungs in these cases. I observed this peculiar condition of the lung in a young woman, who died at the Massachusetts General Hospital, Dec., 1849. I would premise that she died after two or three weeks illness, of undoubted pneumonia of the right lung, as it seemed to all who saw her. She had the rusty sputa of that disease. The lung was generally tougher than normal, and covered with a thin recent membrane. The lower lobe was solid, and on incision it was found generally with a reddened surface, but studded with masses varying from the size of the smallest tubercle up to that of a walnut, opaque, white and solid, resembling, in fact, in all their characteristics, distinct, isolated tubercles. Had we not known the previous symptoms, we should have undoubtedly considered them as tubercles. The apex of the lung was less seriously diseased throughout, but it contained a few of the smaller masses, and a little cavity. A few of the same bodies were seen in the lower part of the upper lobe.

Notwithstanding the symptoms of pneumonia, I am inclined to believe these bodies to have been tubercles of recent origin, which had excited and kept in existence a hepatized condition of the lung.

Analysis of the Preceding Facts.

I have noticed but eight* cases of this combination of rational and physical signs, since January, 1842, *i. e.*, during nearly thirteen years. Six of these I have already laid before the Society. The two additional cases will be given under the head of Diagnosis. All excepting one have either died of phthisis, or the disease is going on at the present time. That one, after a severe hæmoptysis and the rational signs of phthisis, is said to be healthy at the present time.

Considering it a form of tuberculosis, it is quite rare. Dur-

* Since this paper was prepared I have seen three more cases, and am induced therefore to believe the disease to be rather more common than I have heretofore supposed.

ing the same number of years, I have made records of more than 500 cases of Tubercular Disease, and as only three of the above cases occurred in my own immediate practice, I think we may infer that not more than once in one hundred and fifty or two hundred cases, shall we meet with this anomalous form of tubercular development.

The *ages* of the patients present some curious phenomena, which I think can scarcely be explained by the fact of the greater number of all tubercular cases occurring in early life. Of the seven cases, either fatal or now threatening a fatal result, the oldest is 34, the youngest is 22 years of age, and the average is 25 years.

The *sex* in all the cases was male.

Temperament.—All of the persons thus affected were of an unusally active temperament; and this, taken in connection with the nervous irritability,—apparently the result of the disease,—seems to indicate that, other things being equal, the active, intense excitement of the present time, in every species of business, *may* predispose to this kind of tuberculosis. Of the eight, seven may, in the above particular, be fairly ranked with "*Young America;*" all of them having been born in New England, and in the performance of daily duties may be ranked as follows:

Professions.—Three of them were salesmen of large mercantile firms, and were called to a constant, unintermitting exercise of the mind, and exposure of body as travelling agents, &c. Two were clergymen, young, active, and devoted preachers of earnest orthodox doctrines, three times each Sunday, and perfectly reckless of all hygienic rules in the performance of their parochial duties during the week. One was a student in college, stimulated to the last degree with an honorable but deadly emulation of his peers for a prize in declamation, and, Demosthenes like, spouting in the open air. Finally, two traders, both of whom may be considered as being of the above described character, and each claiming to do nearly twice as much as any other man. Not one of the eight presented a single phase of the sluggish disposition. A certain railroad

speed of mind and of body, and a kind of superhuman disposition for work, was the distinguishing trait of all of these unfortunate persons.

Symptoms Precursory of the Serious Symptoms, which Induced the Patient to Consult a Physician.

Cough.—This was noticed as slight or occasional in four, for a space of time varying from three weeks to many months, but it was never a marked symptom. The patients hardly noticed it, and had not consulted a physician for it. In one, it soon became urgent, and ushered in the severer symptoms of disease. In one only was it stated that the patient had never been liable to cough.

Expectoration.—Two had no sputa. In three, hæmoptysis had occurred; and in one it occurred several times.

Thoracic Pains.—In four only were they noticed. One of the persons had no premonitory pains. In three, pains occurred. It was slight in two; and severe in one only, viz: over the region especially affected by disease.

Aphonia.—Had occurred months previously in one case.

Digestion.—Usually not much disturbed; but in only one was it said to be perfect. It was bad in one, and there was loss of appetite and constipation in others.

Urine.—Noticed twice. Once a strong odor and sediment were noticed. In the other case, it was normal.

Fever, &c.—Noticed in five cases. None in two cases; considerable only in one.

General Health.—Mentioned four times. In three it was a little disturbed. Patients felt a little ailing, or had lost a little flesh, but all were able to attend to their business till seized with the more acute symptoms, and needed the attention of a physician.

Exciting Cause.—Loud speaking in the open air, and a very severe exposure to a cold wind in winter, were mentioned as the first causes of the trouble in two cases. In other cases it was not manifest.

Symptoms after the attack, or after the physician was called.

Cough existed, more or less, as in common phthisis, in five out of six cases. In the sixth there was no cough, only a slight occasional hem, for a long time after very extensive physical signs were manifest.

Expectoration.—In one, who had no cough, there were no sputa. In the five others there were the varied appearances seen in phthisis, viz.: in two, hæmoptysis; two had greenish sputa; one had thin and glairy mucus. At times there were ragged and opaque masses.

Thoracic Pains.—In only one were they a prominent symptom. In this they were agonizing on motion. In two they were described as dull.

Dyspnœa.—This was a *constant* symptom. It was slight usually, and scarcely perceptible at first, or only on exertion; but becoming more as the disease gradually invaded the lung. At the latter stage of the disease it was very great, and caused lividity.

Digestion.—Costiveness occurred in three. In two there was some oppression after food. In one only was there decided dyspepsia of some months' duration.

Urine noticed only twice. It was natural in one; dark and of strong odor in another.

Fever.—Little or no fever observed at first in five. But in three there were febrile symptoms at last, as in phthisis proper.

Cephalic Symptoms.—There was an undue restlessness and nervousness about themselves in three of the cases. No delirium or other serious symptom, except toward time of death.

Strength.—In the early part of the disease the patients did not lose their strength. When a fatal result occurred, there was, of course, a gradually increasing debility, as in common phthisis.

Physical Signs.—The most marked sign, and almost pathognomonic of the disease, was *a fine explosion of crepitous râle, exactly like that heard in pneumonia, and like that perceived at the lower part of the back, or just about the angle of the scapula,*

when a certain amount of bronchial respiration was heard at the very lowest part. Unlike the crepitous râle of pneumonia, *it persisted without change for a great length of time, varying from weeks to months.* This sign was heard in all. It was in the lower third of the back in five, and in one of these it extended slightly, and by a well-marked outline, to the front. In one only was it confined to the front. It occurred twice in the right, and four times in the left lung. The shortest record of its existence (and this is imperfect, because the patient left town while it actually existed,) was forty-six days. The longest was twenty-two months!

In four cases, pectoriloquy or bronchophony ensued, after a great length of time, in the spot where the râle was heard; and subsequently, or perhaps at the same time, disease attacked the upper parts, or those more usually seized upon by tubercular disease.

Treatment.—In five, an antiphlogistic course was pursued, viz: leeches in two, and mercurials in three; in one instance to slight ptyalism. But no effect was produced, the crepitous râle continued as if no treatment had been adopted. In four of these cases the usual treatment for phthisis was subsequently used. In the fifth the iodide of potassium was used faithfully, but without avail apparently, for the disease is advancing.

In cases 7 and 8, detailed under the heading of diagnosis, some effect seemed to be produced either by time and nature or by the treatment.

Appearances at the Autopsy.

In only two have I made an autopsy; both of these were quite chronic. In both the disease was peculiar in the lobe where the crepitus râle had been heard. It was of a uniformly dense structure, or with this were numerous isolated tubercular bodies, and small cavities, containing pus. The lobe, when incised, presented a smooth cut, was less friable, less granular, less purulent than is seen in the third stage of pneumonia, to which it was allied in general aspect. This appearance had

invaded the whole of the lobe of one lung, and, partially so, the lower lobe of the other lung. In one case this part was occupied by a large irregular cavity, exactly such as is seen in tubercular lungs at the apex of the organ.

Usually the disease diminished from below upward, so that in one case the upper lobes were almost free of tubercles, while the middle portions were studded with opaque small tubercles amid healthy lung. In one a cavity was found at the apex. In this case the lower lobe was dense, as above described.

The *pleuræ* were always adherent, and generally very strongly so; but over one lower lobe that was quite dense was seen a recent soft membrane, and the pleura was of a vivid redness.

In one instance, I subjected the specimens in the tubercles, and the gray solid portions, to the examination of two able microscopists. Neither of the examiners found the usual inflammatory corpuscles, but the so-called tubercle corpuscle in abundance.

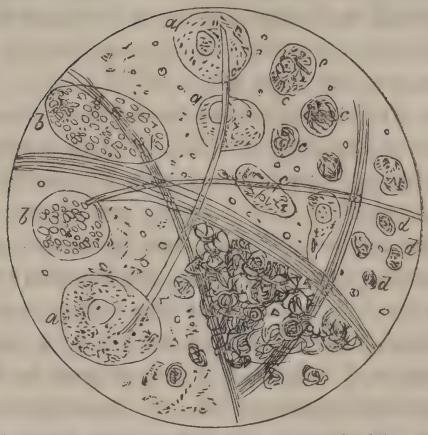
In a third case, (not reported, because seen imperfectly, except as to the diagnosis, and since this paper was commenced,) which presented most of the phenomena already described, only in a more acute form, the following appearances were noticed by Dr. Ellis,* who has kindly allowed me to have them as illustrative of this paper. It seemed as if a regular gradation could be traced from the inflammatory corpuscle in the parts least diseased, and looking least like tubercle, down to the collapsed and shrivelled "tuberculous" corpuscles found in the more diseased parts. I shall return to this subject under the head of "Pathology of the Disease."

* Dr. Ellis made the following report on some small pieces of the lung of a young man who died after hæmoptysis and a comparatively short disease, but with the physical signs as stated above:

To the naked eye the tubercular deposit was present in three distinct forms: 1st, as isolated, round, yellowish white granulations, about a line in diameter, and separated from each other by pale red pulmonary substance; 2d, as a yellowish white, almost diffluent or gelatinous matter, a small quantity of which only was seen; 3d, as a yellowish granular substance, containing but little moisture. This last form was most abundant, occupying, in large irregular masses the place of the pulmonary tissue.

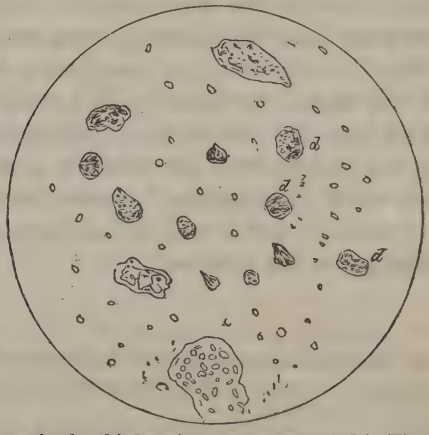
On examination with the microscope, the first two varieties were found to

FIGURE 1.



contain essentially the same elements as represented in Figure 1, viz: epithelium, inflammatory corpuscles, and others of various sizes (the latter unaffected by acetic acid), forming a regular series down to the so-called tuberculous corpuscle. In addition to the well marked epithelium cell, others were seen in which the nucleus was almost obscured by the minute globules, which entirely filled, and gave the peculiar character to, the inflammatory corpuscle.

FIGURE 2.



The appearances in the third variety, are represented in Figure 2. Here the larger corpuscles had almost entirely disappeared, a few fragments only remaining, while the number of so-called tuberculous corpuscles had much increased.

Numerous minute globules and granules, were floating about in all the specimens.

The microscope used was one by Nachet, and with a magnifying power 533 diameters.

FIGURE 1. *a* Epithelium. *b* Inflammatory Corpuscles. *c* Granular Corpuscles, of various sizes. *d* The so-called Tuberculous Corpuscles.

FIGURE 2. *c* Inflammatory Corpuscles partially disintegrated. *d* Same as in Figure 1.

Diagnosis.—This is not always very easy, and at the first view of the facts, it seems to be almost impossible. All the physical signs are those usually attributed to pneumonia, and they are situated in the portion of the lung usually attacked by pneumonia. This class of cases shows perhaps better than most others the great importance of an accurate comparison of the rational with the physical signs. For if we depend upon either exclusively, we shall certainly fall into error. For on the one hand, very serious and alarming symptoms may exist with very trivial signs at the base of the lungs, the apices being entirely healthy; and on the other, there may be almost no rational signs, and the patient may be really almost wholly well, while by the physical signs we shall discover extensive disease at the lower portions of one lung. The two most important elements toward making an accurate diagnosis are—1st, the unusually *long persistence* of a very minute crepitous râle in a limited portion of the lower part of a lung; and 2d, the existence of such a râle in the same part, without any but perhaps the most trivial rational symptom. Cases 1, 2, 4, and 6, may be ranged in the first, and cases 3 and 5 in the second class.

It will be easily seen that in the first class it will be impossible to come to an accurate diagnosis at the first visit. A certain length of time is absolutely necessary. At present I fear it will be impossible to be perfectly sure even after many weeks, or it may be months, of duration of the râle.

The following cases illustrate this remark;—

Case VII.—The Rev. Mr. C——, aged 27, born in Massachusetts, always a scholar, and always in excellent health, except that he had been liable to constipation, hæmorrhoids, and severe headaches. He had always overtaxed his brain, and had used in earlier times, very freely, tea and coffee, but not tobacco. He had always supposed that his lungs were especially strong, and had been accustomed to preach loud and long, often in the open air; and three times each Sunday he performed his ministerial services, with more than ordinary earnestness. I saw him July 5th, 1853, in consultation, for the

following train of symptoms :—It appeared that four weeks previously, after having been unusually free from headache for some time, he was suddenly seized with cephalalgia, nausea, and vomiting. A little blood was seen in the matter rejected, and the patient felt a severe "blow" at the epigastrium, during one of the last efforts to vomit. The succeeding day, although he was weak, he was easier; having only slight headache on exertion. Forty hours afterward he preached moderately, and felt no inconvenience save debility. During the following week, however, he studied very hard, and preached as usual three times on Sunday. Great prostration ensued. The next morning he hawked up a little clotted blood, and on Tuesday, two tablespoonfuls of arterial blood. He then took to his bed from weakness, and during the four following days raised more or less, never, however, very copiously. During this period he had no tickling or discomfort in his throat; the cough was slight, similar to what he had been liable to for a year, after speaking, but which he had never thought of as of any importance. He had had, two days before I saw him, a slight pain across his chest, and a little under the left clavicle; slight dyspnœa on walking. His appetite had been good until a few days. For his costiveness, he had taken salts and oil four or five times. He had had no chill or heat, but had had an occasional sweat, and had lost flesh.

His hereditary tendencies were not to pulmonary disease.

At my room he seemed quite well, but thin. The tongue had a thin coat; he did not cough ; had no change in the voice.

The physical signs were as follows :—On inspection, nothing peculiar. On percussion, fair every where. If any difference, there was a slight difference of pitch in the clavicular region, in favor of the left. Murmur quiet, but vesicular in front, although at times I thought there was occasionally a little less expansiveness about the right than the left clavicle. Voice normal. Behind: Percussion not very clear any where. But the most striking and peculiar sign, was *an explosion of the most minute crepitus râle heard, on full breath, in the lower third of the left back.*

He had been taking an iron mixture. This was continued. He was directed to give up preaching, and to use croton oil to the lower part of the chest.

He returned immediately into the country, and I saw him again July 23d (in about twenty days). The crepitation had then almost wholly left him. It could be just heard on a full inspiration.

Daily bathings and frictions. Chew rhubarb for costiveness. Continue croton oil. Horseback exercise.

Sept. 8th: Had gradually been getting better, and had not preached until two weeks before, when he felt as well as ever. The digestive system had been well, except that he had piles. No cough, but he had raised by hemming in the morning a green substance. Auscultation and percussion seemed perfect. No râle anywhere.

Ung. gall. and stramonii ordered for the piles. Allowed to preach once each Sunday. Horseback exercise five to ten miles daily.

The patient seemed well; the congestion of the lung was gone, and I saw nothing more of him for exactly one year, when he again called, and related as follows:—

He had preached *twice* daily until July, without cough or any trouble but his habitual costiveness. Eight weeks previously to his visit, he had again a cough, and had raised bloody sputa and some frothy white fluid. His throat had been sore, with almost complete aphonia. One day he had raised a bloody clot with relief to the throat. He could not remain seated without having an unpleasant sensation across his chest; an excessive faintness and "all gone sensation" along the sternum. He coughed a little in the morning, perhaps ten or twelve times. He had no fever, but a slight heat of the skin; slight pain in the left chest, six weeks before his visit. At the visit, his pulse was at 96, and his appearance was not very morbid.

The only sign was a little less respiratory sound under the right than the left clavicle, corresponding to where there were *very obscure* signs at the previous visit.

He asked if he might resume his duties in a village near Boston.

I told him that I feared the slight difference of murmur noticed above, and that if he could travel it would be better to

do so. If that were impossible, he must probably be settled. But he must never preach in the evening; he must use porter or wine, and if pain should come on in the chest, he must use croton oil, and, finally, apply nitrate of silver to the throat.

About a week subsequently I examined him again, and was fully confirmed in the opinion that there was a slight tubercular development at the summit of the right lung. This opinion was confirmed by the independent examination of another physician upon whom the patient called soon after I had seen him, having been not wholly satisfied with my own views of his case.

Jan. 20, 1855: I have seen this gentleman recently. He undertook the charge of a parish, and has steadily failed since; and now has crackling and every sign of tubercles throughout the whole of the upper lobe of the right lung.*

The preceding observation is very interesting as affording another illustration of the usually fatal indications to be derived from a fine crepitus râle existing under the circumstances I have noted above. But unlike the others that were fatal, the râle was dependent either upon something more transitory than tubercular matter commonly is, or if dependent on a collection of miliary tubercles, these tubercles were cured by the treatment pursued. I am inclined to the former opinion. But whatever may have been the cause of the sound, the observation seems to indicate that a tubercular diathesis existed from the first, which finally showed itself in its usual place.

But the following observation presents the most formidable difficulties in the way of diagnosis. A year or two more of the patient's existence may class it in the same category with the preceding; but, at present, it stands alone. I have met with no similar case:—

Case VIII.—I. L. H——, aged 38, Roxbury, superintendant of a steam planing mill. Usually in youth he was in robust health. At the age of 18, he had lung fever, and two or three slight febrile attacks afterward, before the illness began for which he consulted me. For several years he had been liable to headache and costiveness. Two or three years before, had

*This gentleman died recently of phthisis, and cavities were found in both lungs.

slight hæmoptysis after a violent strain, and subsequently he had a disposition to hem. He had often had bloody sputa, and twice had raised more than half a pint. No other prominent symptom, except perhaps a dull pain in the thorax, and some dyspnœa on going up stairs. The exertion of going up an eminence, and, also, excitement of mind, had produced the hæmorrhage. He had been able to lie on either side; no palpitation. Appetite, usually good; bowels, a little costive, at times, for two or three days; urine, well. No hectic, or emaciation, or much debility.

At the time of his visit to my office (Jan. 21, 1853), I found him a tall thin man, but not very unhealthy in aspect. He had at times a slight tickling in his throat. His pulse was regular, 72. Right tonsil a little enlarged; uvula, well. Twenty-four hours previously, he had raised two or three ounces of blood, without coughing or much exertion; and for several days he had, perhaps a dozen times, one or more sputa, daily. He was afraid to lift even the smallest weight, for fear of hæmorrhage recurring.

On examination of the chest, it appeared long, but contracted toward the base. Murmur, everywhere good; no râle, even on coughing; voice, good; heart, normal.

Seven days afterward I saw him again, and learned that he had not raised more than a tablespoonful of blood, and he had felt well save that he had been costive, and had had a little pain in the bowels. On auscultation, similar results to the above, but *on coughing* a slight crumpling was heard in the lowest part of the right back, and *a distinct crepitation in the infra axillary region.* Voice, normal; no bronchial respiration; percussion gave a little less sound there, but no real dulness.

A laxative pill and acid sulph. dilut. gtt. x. were ordered three times daily. Croton oil to chest. Gentle out-of-door exercise.

March 11th: He had been gradually getting better, and had attended to business slightly. For a few days before the visit, he had felt rather less well, and on the 9th raised a little blood, followed by half a pint on the 11th, dark at first. He however had not desisted from business. Omitted drops a few

days before, and had been taking half a glass of madeira wine three times daily.

Crepitation as before, and perhaps a little more toward the mamma. Pulse 84, even after exertion.

Resume acid. Omit tonic. Continue external irritants.

He soon afterwards resumed more fully his business, but avoided all violent efforts. He had occasionally attacks of hæmoptysis, and Nov. 11, 1853, I examined him, in order to see if any trouble remained. None could be found, and the patient seemed well, though unable to labor as hard as before. He continues well now (June, 1855).

In this case I certainly feared the development of tubercles, from the rational signs, and from the absence of any rational signs of pneumonia, and finally, from the persistence of the crepitation (certainly three months). It is the sole one of eight cases, in which the same or similar symptoms and signs have existed, which has not resulted fatally, or the patients are now ill of chronic disease. It is certainly a stumbling-block in the diagnosis of such cases; but the patient may within a year or more prove to be phthisical, as in case seven.

From these two observations it is evident that my first remark, in regard to the value of the long persistence of crepitation, as *pathognomonic* of this form of tuberculization, must not be received with *entire* confidence. Nevertheless, in seven out of eight of the cases the rule holds good, and possibly even in the eighth case the patient may become tuberculous, as I have already suggested.

In truth we may say that if in any case of pulmonary disease which shows itself, either by a few of the more prominent signs of phthisis, such as hæmoptysis, a slight cough, or a disturbance of the general system, &c., or if there be scarcely any thoracic symptom, and yet the patient complains of being less well than usual, we must always make a decidedly unfavorable, though not absolutely fatal, diagnosis and prognosis, if we find a crepitation in the lower portions of one lung, without any other

sign of pneumonia ; more especially if this sound continue without variation for more than two or three weeks.

Prognosis.—The prognosis need occupy us but a very short time, for we see from the preceding article it is very unfavorable for any one to have symptoms and physical signs like those described in the preceding part of the paper. It is not simply unfavorable, but it may be deemed almost necessary to make a fatal prognosis.

Pathology of the Disease.—This question is deeply interesting. I think the rational and physical signs, and the results of the microscopic examination of the lungs after death, place this class of cases of anomalous tubercular development, just on the disputed confines between tubercle and inflammation. They do in fact show how the two may coalesce, or pass easily from inflammation to tubercle, and *vice versa*, how tubercle may excite inflammatory action. Looking more closely, we see that the physical signs ally this disease, *at first*, certainly very strongly to pneumonia. By their durability, however, they suggest either chronic pneumonia or phthisis. On the contrary, the rational signs, if at all significant, for at times they are so slight as to indicate nothing distinctly ; these rational signs point to phthisis. Thus, during the whole of the disease, the thoughts of inflammation and of tuberculous disease present themselves. At the autopsy a peculiar appearance presents itself ; a mingling of tubercle with what might pass for chronic pneumonia, and Dr. Ellis has very beautifully traced, by his microscope, in one case, a regular gradation from evident inflammatory exudation corpuscles, down to the so-called tubercular cells.* If it be pneumonia, however, at first, it certainly shows by its course, and by the want of influence exerted by antiphlogistics in its treatment, that it is very different from, and more persistent than, common pneumonia. It may, however, be regarded by some as a scrofulous, slowly developing, inflammation, and not acute plain pneumonia, such as we meet

* See note of Dr. Ellis' examination under " Diagnosis."

with in ordinary practice, and which runs its course in from twenty to twenty-five days.*

Treatment.—Alas that it should resemble phthisis so much as it does in usually resisting all treatment. It is true that in two of the cases the crepitus râle disappeared after months of duration, and under treatment, but in one it disappeared only to allow, if possible, graver and more positive signs at the apex. In all the others the disease went steadily onward, unchanged even in the slightest particular by anti-phlogistics, mercurials, blisters, tonics, &c.

My advice in another case, would be, not to rely on medicines, but on constant active out-of-door employments and external irritants. Travelling in foreign climates for the sake of changing, not merely the sky, but likewise all previous habits, should be recommended. A constant irritation by blisters or croton oil should be kept up. In the later periods the cod liver and fusel oils might be resorted to by the practitioner.

This is, in certain respects, a sad termination of our investigations. If, however, the results to which I have arrived are true, they are important, in enabling us to make a more sure diagnosis and more careful prognosis, while they will at least tend to prevent us from the violent heroic, or strongly anti-phlogistic treatment, to which the physical signs undoubtedly tend to lead us.

* Whilst this paper is passing through the press, I find an article by Dr. Cotton,* of London, in which he describes a similar disease, and considers it "chronic pneumonia." Dr. C. does not give any statistics, but he considers that in "by far the greater number of cases the disease terminates favorably under timely and judicious treatment." The differential diagnosis of this disease, from phthisis, Dr. C. decides by the physical signs, which are almost exactly similar to those given in this paper. I cannot agree with him entirely as to the diagnosis, and certainly my experience does not support Dr. C's prognosis. It is an interesting circumstance, however, that two independent observers have been led to notice the phenomenon in question in two such remote quarters of the globe.

* London Medical Times and Gazette, March 31 and April 14, 1855.

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AN APOLOGY

FOR THE

MEDICAL PROFESSION,

AS A MEANS OF DEVELOPING

THE WHOLE NATURE OF MAN.

A VALEDICTORY ADDRESS TO THE GRADUATING MEDICAL CLASS OF HARVARD UNIVERSITY, MARCH 11, 1863.

WITH ADDITIONAL REMARKS ON A

TOPIC OF IMPORTANCE AT THE PRESENT HOUR.

BY

HENRY I. BOWDITCH, M. D.,

PROFESSOR OF CLINICAL MEDICINE IN HARVARD COLLEGE.

BOSTON:
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"The value and rank of every art is in proportion to the mental labor or the mental pleasure produced by it.

"As this principle is observed or neglected, our profession becomes either a liberal art or a mechanical trade."—Sir Joshua Reynolds's Lectures.

Prof. Henry I. Bowditch, —

Dear Sir: — The gentlemen of the Graduating Class of 1863 respectfully solicit a copy of your Valedictory Address for publication.

Sincerely your friends,

William J. Radford,
John Brown Garvie,
D. Hyslop Hayden,
Daniel McPhee,
J. G. Perry,
} *Committee.*

College Library, *March* 11, 1863.

March 13, 1863.

Drs. Wm. J. Radford, J. B. Garvie, D. H. Hayden. D. McPhee, J. G. Perry, —

Gentlemen: — It has seemed to me a matter of doubt whether it would be proper to publish an address, which was written and spoken to you, much as I should have talked with you, at my own office, upon the experiences of my life. Such a communication seems rather like a confession, and is scarcely fit for the public eye. Nevertheless, as you ask for it, I give it into your control exactly as written.

I remain, very sincerely your friend,

Henry I. Bowditch.

ADDRESS.

Gentlemen of the Graduating Class:

By these ceremonies, you have been duly admitted into our ancient and honorable profession of medicine. In a few days, you will part, perhaps forever, from us and from most of your associates in these pleasant studies; and it devolves upon me, as the representative of the Medical Faculty, to give you a cordial God-speed on your future careers of hoped-for usefulness or fame.

Were I to follow my own impulses, I would adopt the laconic but admirable speech, once made by a learned Greek Professor of Harvard to a class of students about to leave *Alma Mater*, as you are about to leave us: "You have done well; I wish you well." But such brevity is not allowed me. In truth, it would indeed be strange, if we, who have been so long intimately connected in the study of our art, which, in old Greek phrase, is "of all arts the most noble," could not spend a few moments in pleasant converse together. Nor does it seem inappropriate that one who, by long experience, knows the fate that betides most of the periods of professional life, should, at a time like this, utter some words of cheery hope, or perchance of

warning, to his juniors, just starting on their various pilgrimages.

Allow me, then, to present to you one or more faintly-traced pen-and-ink-sketches, so to speak, of a few of the more salient points of a subject I deem most interesting in itself, and not unsuitable to this occasion, when so many of you are about to make your first step forward in the practice of medicine, and when, if ever, it is most important to move under the guidance of the highest principle. I propose, therefore — The Medical Profession; its noblest aspirations; the fair opportunities it offers for the development of the whole nature of man; its highest duties, as connected with such opportunities.

What should each one of you hold up before himself as the Highest Ideal of Professional Life?

As I understand the riddle of existence, it is not to gain *Riches* merely, although, certainly, you may ask, in the words of Agur's prayer, to have neither poverty nor riches, in the future of your profession.

Is it, then, *Honor* that you should seek after as the acme of your professional hope? What the world calls "honor," can never be gained by physicians. Confidence, respect, esteem, perfect love, if you please, on the part of grateful patients; but that is not "honor," as the world uses that term.

Is it, then *Power* that you may hope to attain? You will be too often powerless before disease and death, to allow a fond love of power to seize upon you; nor could you gain it, even if you wished it.

Is it, finally, perfect *Professional Success?* Should

you take this as your highest choice, that you should be beloved and respected in life, and mourned for by thousands at your death? Surely, you will say that this is worthy of your highest effort. Ought you not, therefore, throw your life into this seemingly great thought, so soothing to you while living, and promising to throw lustre on your memories when dead?

Each and all of these, and other similar objects that might be named, though absolutely good, seem to me to fall far short of the highest ideal of human life. I have seen a physician rich, full of credit with the multitude, great in his power of controlling human beings committed to his charge, and surfeited with professional success, and yet he was mean in his very nature, a total failure, in fact, in the prime object of existence.

What, then, is this nobler aim, and for lack of knowing and striving after which, so many make either partial or total failures in life, and become mere breathing machines — living, but soulless bodies?

Life is not given to us *chiefly* that we may become wonder-working mechanics, keen men of business, brilliant wits, deep scholars, wise philosophers, orthodox theologians, able jurists, or even learned and skilful doctors. The gaining of these ends, are only means, so to speak, of life — means, forsooth, and only means toward a far higher and far holier end, viz: the harmonious development of every manly quality of one's nature — qualities implanted in him during the mysteries of conception, and receiving as much the impress of Almighty Power at the moment of birth, as when, in the beginning of our race, the same

Supreme Being breathed into the first man's nostrils the breath of life, and that imperfect creature became a living soul.

But where shall we find this ideal manhood, this type of all the grand qualities of human nature? Can any man find it within his own grasp? Has any man ever found it in another? Imperfect as we all are, we seek in vain. Shall we, for that reason, cease to keep that ideal in our view? I think not. Better have an aim too lofty ever to be reached in this world, than to drag on through life merely, as it were, sucking out a miserable existence from every hour, as it rapidly passes by us.

Every profession and trade tends, if we did but know it, and shape our lives in that belief, to bring each one of us up toward this standard; but I love and respect our beautiful profession, because it tends, I think, more than any other to lead us, at least, to an appreciation of it.

Let me endeavor to illustrate this part of our subject, and show you, by a few practical examples, the grand opportunities offered by our profession, in aid of any endeavors we may feel disposed to make toward this standard. If to some captious spirits I seem to pass too minutely into the facts of personal experience, or to deviate from the strict path most appropriate for an occasion like the present, I am quite sure that you, my friends, who have just received your diplomas, and for whose benefit alone I speak, will pardon the improprieties, for the sake of the intended good to you.

If you question the deepest recesses of man's nature, you will find that every human being desires —

First. The enjoyment of the outward world of experience, and a perfectly healthful physical existence.

Second. He tends to friendship and love, and to the exercise of all those kindly emotions that cluster around the human heart.

Third. He longs for the culture, growth, and free employment of his intellect.

Fourth. Man tends, whether he will it or not, as truly as the needle to the magnetic pole, at some period of his earthly career — it may be only during the last few moments of it — toward faith or a religious life.

A few words on each one of these divisions of the subject.

No man, however great a scoffer he may be against the profession, in reference to its influence on *public* hygiene, can deny that the study and practice of our art, by giving to physicians a knowledge of physiological laws, and an insight into the first encroachments of disease, tend to the preservation in robust health of physicians themselves. A vast majority of bodily ailments are caused by sins against the simplest laws of life and of health. These sins, though ignorantly committed by the laity, carry in their train punishments both swift and sure, and oftentimes long and distressing. The physician may, if he choose, avoid almost all of these. I would, therefore, commend to you our art and its practice, in that it will influence well your future bodily health, — the *corpus sanum* of the poet, upon which so much of your future morality, intellectual activity, and, it may be, your very piety

will depend. Is there any other profession in life that can justly claim as much?

If we now turn to the region of the emotions, in their widest signification, all-powerful as they are in their tendencies to improve, repress, or modify man's development, we shall find that the practice of our profession acts in a manner most admirable upon those engaged in it. How can it be otherwise? If the influence of noble example be of any avail in this world; if the benign presence of self-sacrificing friendship ever touch the human soul; if the sight of a lofty philosophic serenity or childlike faith at the approach of death, ever appeal to all that is divine in man, then enter with confidence the portals of our profession, for you will thereby have the most golden opportunities of seeing, by the bedside of the sick and of the dying, all the finest traits of human character, illustrated by the purest examples the world can produce.

I would that I could give you even the faintest idea of what I feel that I have gained by my profession, in that it has given me numerous opportunities of studying closely the kindly influence of suffering and disease upon the sick, and upon all who minister to them.

In order to illustrate my meaning, permit me to try to sketch one or two scenes, that have recently occurred within my own experience.

About five weeks after the hard-fought and glorious battle of Antietam, I was called to visit the head-quarters of the Army of the Potomac, then at Pleasant Valley, only a short distance from the battle-ground. During my stay, I spent nearly two days at a camp

hospital, at which were collected about two hundred of our wounded. While my companions, who were not of the profession, spent their time in roaming at will over the ten miles' circuit of that sanguinary field, I remained at the hospital, helping, *as any physician would have done*, the surgeons in charge in their care of the wounded. I was amazed at the quiet, uncomplaining fortitude displayed by our suffering soldiers. It was a most interesting psychological phenomenon, and it was all but universal. It raised my estimate of human nature, and thereby raised me, my own individual nature, to a higher grade of existence. The memory of those sufferings, so nobly borne, will ever be a stimulus to me to bear serenely the greatest ills of civil life.

But there were two comrades that especially charmed me, and I would that I could, in fitting language, so tell their touching story that the memory of its beauty might forever remain upon your hearts, and often, in future, rise up before you, as it now comes up before me, arousing within me the tenderest and most lofty emotion. Listen to the tale of the young Zouaves. They were members of Burnside's corps, and belonged to that noble and fearless band, which made the famous charges over the narrow bridge, thence up over an open hill, in face of an intrenched foe, finally gaining the height, but with a fearful loss of life. Among the bravest of the brave, on that bloody day, were these two. One was slowly but surely dying of a ghastly wound in the thigh. He had been lying nearly motionless for about five weeks. He was the elder of the two, and had a peculiarly fine, intellectual countenance, pallid

with the approach of death. His tall, well-knit form had the rounded muscular development of a right manly youth. His skin was of the purest white and finest texture, and of almost girlish softness; his deportment eminently quiet and dignified. I never saw him smile but once, and that when the surgeon in charge remarked that the "Zouaves are always brave." He looked, in fact, like a young Christian warrior who felt that he had fought bravely his last fight in a noble cause, and now was quietly preparing for the coming doom, serenely waiting for death as the greatest boon, that could be vouchsafed to him in the intensity of his suffering. From the frightful nature of his wound those sufferings must have been torture, but he made no complaint. Nay, he rather blamed his own want of fortitude, for allowing even a few low moans to escape his lips. "Do we cause you too much suffering?" I enquired of him, on one occasion, when we were moving him, and he uttered a word indicating great anguish. "Oh, no," he replied, "I am only regretting that I cannot restrain these moans." In his presence I seemed before one of a superior nature, physically, intellectually, and morally. There was a silent natural language about him that spoke thus much to every understanding heart. A certain nameless, almost divine influence appeared to emanate from the simple pallet of straw, and the dying young patriot silently poured into the hearts of all around him a portion, at least, of his own serene and holy thought. I saw him often, and he had always that same noble deportment. I could not forbear entering his tent whenever I passed by. Every moment spent in ministering to him even

by a word, was a blessing vastly greater to myself than it could be to the sufferer. On my departure, I offered to visit his family, which he quietly declined, on the ground that it would take me far from my route home. He was however glad to have me write to his parents, which I subsequently did. I told them of his totally hopeless situation. I spoke of my admiration for his gallantry in the fight, and his serenity at the prospects of death, &c.

Permit me to give you one or two brief extracts from a letter received a short time afterwards from his broken-hearted mother. It seems to me merely the complement of the story I have related of the youth, and illustrates and explains what I myself saw. It is couched in simple language, and shows little of literary culture, but the richest spiritual experiences of life. I give the words exactly as written: —

"Dear Sir: . . It is a comfort to a bereaved mother to think that a young soldier in camp can live prepared to die. He have suffered much; was wounded before at Camden, though not yet twenty years of age. I thank God that he was a soldier of Christ, as well as soldier of his country. He was one of the first to stand in defence of his country. He is a year and seven months in the army. But his last battle is fought; he have gained the prize; his trials and sufferings are over. I must content myself with the hope that I shall go to him. He cannot return to me." . . . . . .

Now what was it, my friends, that brought me thus intimately within the sacred precincts of the death-scene of a stranger, or still more into that holiest of

holies, a bereaved mother's heart? It was solely because I was a member of our noble profession.

But I have not told you all that I saw and gained at the death-bed of the young Zouave. Whenever I visited him I saw by his side, and tenderly watching him, a youth dressed in the jaunty costume of the corps, with his long silk tassel dropping gracefully from his cap, over a brow of a more youthful aspect than that of the wounded sufferer. He was acting as nurse to his comrade, and having escaped unharmed from the terrible charge upon the enemy, was full of ruddy life and buoyant hope. He was evidently a year or two younger, but their bearing towards one another was more like that of two lovers, than that usually noticed between man and man. A sort of Nysus and Euryalus friendship it really was, and as richly worthy of immortality from poet's heart and pen as that which the Mantuan bard has so sweetly sung. The contrast between the death-like aspect of the sufferer and the robust health of the other, was most striking and beautiful. The young nurse was forever near the bed of his dying companion, and springing to his aid at the slightest intimation. On one occasion, in an especial manner, did this devotion show itself. I certainly shall never forget it. We were dressing the wound, and necessarily caused much pain, so that groans were wrung from the patient. His comrade seemed almost frantic with his eager sympathy. He flitted constantly around in aid of the surgeon, ever and anon leaning over and murmuring into the ear of the sufferer soft words of consolation and of hope, until finally, just at the moment of extremest

suffering, a sudden, stolen kiss was pressed upon the pale forehead of his dying comrade!

Why do I detail to you these things? Some, I fear, may deem them all ill-timed. What have they to do with a valedictory address to a graduating class of medical students? Two reasons I have for bringing them before you. Similar events, modified of course by circumstances of time and place, you will constantly meet with in your future professional career, and by relating, even imperfectly, these two beautiful and unique scenes, I would lead you to open not only your eyes but your whole natures to all similar purifying influences. We are made better men by being allowed to see them.

My second object is less germane to this day's object. But for this very reason, if I had no other, I would relate this story at the present hour. As Anacreon claims that, while wishing to sing of heroes, his harp responds only with notes of love, so I find, in these earnest days, that this sacred war in which the nation is engaged, always comes up before me, when I would speak even of the gentlest and most peaceful influences of our profession. I confess therefore that my second reason is that I may thus, somewhat publicly, bear testimony to the grand Christian fortitude evinced by almost all of our soldiers on this and similar occasions. I have likewise wished to describe, even in the faintest language, the superb serenity of soul evinced by that dying warrior, and the warm, self-sacrificing friendship of the other of these two most youthful soldiers. Would to God that any words of mine could make immortal in man's memory these high traits of the two patriot

youths, noble fighters in this good fight for human liberty and national life.

But you will not need the sorrows of the battle-field, for many such opportunities. Wherever the medical art exists as an honorable profession and not as a mere trade, there will similar, though perhaps not such striking scenes be exhibited, at every quiet fireside of civil life.

I turn now to the influence of our profession upon the intellect of man. I can of course do no more than simply touch upon this great subject.

I have always thought that the fact that the profession has had amongst its noted men some of the finest intellects the world has ever seen, and acknowledged as such not only by the communities in which they lived, but also by posterity, is a strong proof of the capability of our profession to satisfy the intellectual cravings of the highest class of minds. A profession that ranks among its votaries a Morgagni or a John Hunter, surely should not suffer, when compared with any other, as a means of intellectual advancement.

Again: Look around you in the various communities in which you live, and observe the relative rank of the physician, as a man of intellectual power, in all the every-day doings of the circle in which he moves. Generally, you will find that he holds either the very first, or nearly the first rank; and he holds this position, usually, by the divine right of a higher mental culture than his neighbors generally possess.

Yet, further, let me appeal to the individual consciousness of each one of you. Young as you are in

medical study, and all unused as you are to medical practice, I nevertheless feel certain that there is not one among you, who will not bear witness to the sharpening of the wits, to the increased clearness of thought, and the really hard intellectual work you have had, — while endeavoring to thoroughly grapple with any obscure case of disease, placed before you, even during this brief curriculum, that has just elapsed.

Indeed, there is nothing that requires greater care in observation, more acuteness of perception of the intimate relations of things and events, or clearer, more judicial powers of weighing evidence than the thorough, comprehensive elucidation of many of the cases constantly occurring to physicians. "Who is more profound, more judicious, more penetrating than Linacre?" writes Erasmus, about three and a half centuries ago, when alluding to the learned physician to the King, and family doctor to the aristocracy of London.* Indeed, Gentlemen, neither a fool nor a lazy man can ever be a great and good physician. May I not, therefore, say, in one word, our profession, pursued with manly aims, while it more than satisfies the human heart, affords, too, everything necessary to satisfy the cravings of intellect for a stalwart growth.

Let me, in connection with this topic of your proper intellectual culture, make a few hints on reading. You will all agree, that, at the present day, it will not do for any man to consider his student life as ended with the reception of his diploma. It has but just commenced. It ends only with his life. Hitherto,

* Butler's Life's of Erasmus. London, 1848.

you have read to learn your profession ; hereafter you must read for the practice of it, unless you intend to settle down as the meanest and most pitiful of routinists. Of course, every man, if he read at all, will endeavor to keep up with the current medical science of the day. I would earnestly advise you, however, not to limit yourselves to this phase of literature. A wise and liberal culture enjoins upon you a wider circle. Shakspeare will teach you human nature in a manner that no other writer can. Dickens, and others of similar stamp, will warm your hearts toward the miserable and poor, with whom you will be thrown in contact, especially during your earlier years of practice. Let broad farce, too, and keen humor have their places. I think a fine comedy helps digestion, and it will enable you to laugh off some of the whims of nervous patients. What grander appeals to independence and manliness of character, — what more touching warnings than can be found in Burns! Who does not walk more erect after reading Tennyson's grand dirge of the nation at the death of Wellington, the warrior, the statesman, the man of power? The mild and genial philosophy of the Excursion, showing, as it does, how much there is of real beauty in some of the commonest acts of daily life, has been of infinite service to me ; and it is my firm belief that I am now a better practising physician, because Wordsworth has lived, and has sung out his rich human notes from his poet's nook in Cumberland.

Read, then, not only medical, but, as far as possible, good works in all departments of literature and science ; and permit me to add, that now is the appointed

hour, the golden season of your lives, Accept, then, with joy this God-given privilege of leisure, and sow broadly the seeds of your future growth. Ere many years, you will find cases accumulating, and the much-coveted business encroaching upon time. Then the scanty moment for reading will have to be snatched from toiling, almost drudging life, or in the midst, perhaps, of the whirl of professional success, only at the dead of night. Lose not, I beg you, these few precious years, now opening before you, during which, perhaps, you will have few patients, and many weary hours, unless, with strength of will, and intelligently, you wring from them the means for your own nobler development for all future time.

I pass now to the last and most difficult, but the most important part of our subject.

What influence ought the profession, you have chosen, to have upon your religious character, and what are your most important duties connected therewith? Of course, I can merely glance at a few of the considerations, naturally connected with these topics. As I have already hinted, when commencing this address, I believe as firmly as I believe anything, that every human being, whether wise or simple, good, bad, or indifferent, tends as certainly toward faith, or some religious belief, as he does toward death. No man, unless he be demented, can approach that final point of mortal life, without being compelled to think of that Divine and Supreme Ruler, under whose laws he first drew the breath of life, and in submission, or opposition, to whose laws he has, like a wise man or a fool, lived. At that hour, if at no other, all the shams

of his previous career show their utter nothingness, and he bows in religious faith or fear to meet the impending fate. But thrice blessed is our profession, because the practice of it, if pursued in a truly loyal manner, tends to raise the physician, early in his career, to the broad, really catholic, belief that there is a wise and humane Father, who governs all things rightly, though often darkly to our most limited powers of perception.

This view, I know, is very different from that oft-repeated libel, made usually by bigots, that medicine tends to Materialism, Infidelity, and Atheism. What monstrous absurdity! Can any man dissect the human neck, or examine minutely the marvellous workings of the human hand; can he watch the mysterious wandering of the microscopic germs, seeing, and yet really *not* seeing, their real processes of growth; can he watch, hour after hour, the wonderful revolutions of those apparently mere masses of granules, and observe how life and muscular action are mysteriously and inexplicably evolved during this simple motion; can he do and see all these things, and be, at the same time, an Atheist? Out upon such arrant nonsense!

How marvellous and full of spiritual meaning are these realms of human physiology! Study man as deeply as you may, yet who ever has unravelled, or ever will be able to unravel, the real seminal principles that have lain for centuries, and I doubt not will forever lie hidden, in that threefold mystery of man's nature, conception and birth, life and growth, decay and death. "Gentlemen," often exclaimed to his class one of the greatest clinical teachers the world

has ever seen, "gentlemen, there is always something in man and his diseases that escapes our senses." In each one of these three mysterious phases of human life, appears, forever mocking our weak understanding, — that same great, mysterious, wonder-working power. Hence, I contend that our profession tends strongly to raise any reflecting mind to God, as ever present in His mighty and inexplicable laws. Impressed by a sense of awe before these grand energies, the mind tends easily and naturally toward reverence, and, at times, most naturally toward prayer, which, in its essence, is only an expression, silent it may be, of that reverential awe. Hence, I can readily believe to be true the story, that is told of one of the greatest English surgeons of the last century, and which runs somewhat in this wise: It was noticed that, previously to any important operation, he always retired to a room adjacent to the amphitheatre, and remained there for a short time in total silence. Innumerable were the quiet jokes passed around among those professional jokers, the medical students, as to the reasons for this withdrawal of their great leader. On one occasion, the door of the mysterious apartment was accidentally left ajar, and one more roguish and of a bolder type than his comrades, crept, amid much merriment on the part of the others, to the open door-way; and there he espied the great surgeon, whom they had looked upon as capable of coping with any case, and apparently needing nothing but his own bold heart and steady hand to carry him through any operation, however fearful; this man of intellect and power — on his knees at prayer, — prayer for that help which,

doubtless, had never failed him in the hour of trial, and which he was sure then of obtaining!

It is now many years since, while engaged in midwifery, and when I felt that the lives of two beings seemed to rest in my hands, that I experienced, for the first time in my life, the Divine inspiration that flows from above into any human heart, that humbly asks for aid. In a moment, in the twinkling of an eye, I passed from the agony of extreme mental uncertainty, — nay, actual physical tremor, — to a perfectly clear, unclouded intellect, a reasonable judgment of the case, a fixed purpose, and gained a hand as firm as steel. For that inestimable boon, the richest and most wonderful experience of my whole life, let me ever give thanks to the medical profession and to God!

In connection with this branch of my subject, permit me to allude briefly and cautiously to a topic which trenches, some may think, too much upon the domains of the sister profession of theology, "Oh, for a great, new thought," cries the great German scholar, during his last illness, "to penetrate my soul, and I shall be well again!" If at any time in a man's life he needs firmest support, and warmest sympathy, it is at that hour, when death is near at hand. A kindly word of good cheer, of bright hope, or of high-toned thought, will meet with a warm response, or, at least, with eager gratitude. Each one of you may be occasionally placed in a position in which you will have to say that word, or it will not be said. Once in my life I have been so situated, and I dared not fail to meet the requisitions of the moment. Beware of suggesting at that solemn moment anything of

mere dogma, that can tend to increase the mental anguish of the sufferer. But let all your words be those of loftiest cheer, or of quiet resignation. Suggest, if need be, the mercies, rather than the judgments of Jehovah. Some of you think it impossible you should ever be called upon to say a word at such a time. Be it so. Wait and see what the hour may bring forth. Meanwhile, let me, by these few remarks, lead you to a thought upon the subject, and suggest a caution. Do not substitute a theological formula for what is really wanted by your patient, viz: warm, living, human sympathy with him in his suffering, and the expression of a belief in the existence of a merciful Father, rather than a stern, unyielding Judge. Be, if you can, a real minister of God, to aid a, perhaps, fainting soul. Otherwise, stand aside, in reverent silence, before the August Presence of Allpowerful Death!

Gentlemen, in these few hints, given in this part of my subject, you have the sum and substance of my "Religio Medici." Whether I have said too much or too little to satisfy the judgments of all, it mattereth but little, provided that your young hearts, full as they must be as yet, of all generous hope and of earnest aspiration, only understand my motives in thus speaking.

All hail! then, I say, to our profession for its influence on the whole nature of man! And you, I trust, will cordially say "Amen."

And now, having thus hastily shown you, first, the true objects we should aspire to in our professional career, and second, having briefly sketched the influ-

ence of our profession upon the physical health, the heart, the intellect, and the soul of man, I might close with a warm farewell, and with the assurance that it will always be a source of pleasure to my colleagues and myself to hear of your success in life. I am unwilling, however, to close without some reference to the present condition of our beloved country and the probable relations, that some of you may eventually hold towards some of the patriot men, who are fighting the battles of this, our second revolution.

I cannot conceive of any reasonable man doubting that this is the great historic era of our nation, and before which, as the future historian shall look back upon it, all the glories of that of '76 will pale. I see in it the workings of Divine justice, and in the same way that the revolution of 1688 in England, and that of 1792 in France, swept off, as with the power of a tornado, all the criminal despotisms of those days, setting at naught all the prerogatives of power, and moulding like wax political constitutions, so, in these our latter days, that same Almighty justice is bringing upon this nation the proper reward for its crimes against liberty, during the two past centuries; crimes that culminated, a few years since, in that impious and Babel-like declaration, "We know, on this question, no higher law than the American Constitution."

See the marvellous change already wrought upon us. A few years since, political demagoguism and a peacock-like strutting pride fairly possessed the nation, and we foolishly talked of eternity as the certain future of our *immaculate* political status. Where now is all that overweening confidence? Gone, and I trust forever;

and in its place even scoffers look aloft, and admit that God alone can ride safely upon *this* whirlwind, and direct *this* storm. Out of this, our country's "thunder-storm of battle," if we be but true to our highest principles, he will safely bear our people, and the nation shall become thereby purer, nobler, and more truly free.

Under these circumstances, any man is a coward and recreant to the noblest sentiments of his nature, who does not think it the choicest blessing of his life to be allowed to have mere existence, at the present time, with permission to watch and wait, and serve, even in the slightest degree, in helping forward the great events that hourly press upon us.

But to some of you who have surgical tastes and abilities, how much is opening?

Gentlemen, I would have you not only esteem highly the profession you have chosen, but likewise, like true patriots, ever raise aloft the sacred banner of our country, made more sacred now that it has inscribed upon its ample folds, in letters of living light, "Freedom to every slave." Honor all who fight to sustain it; and deal gently, as with a brother's hand and heart, the brave and dear ones, who fall wounded in its defence. Do not, I beg of you, regard them merely as interesting cases for your professional skill, but bring the fact home to your hearts that they have, in reality, been fighting for you, and for the nation's life, and, whether they have thought so or not, fighting for human freedom. Therefore, you owe them an immense debt of gratitude. While commanding their respect, let them be compelled to give you their love for your

kindness as well as skill. I know of no nobler field than that now offered to a young and enthusiastic surgeon in the volunteer army of the United States, *provided* he duly appreciates the grandeur of the contest now going on, and honors, as he should be honored, every wounded son of the Union. Oh, friends, young brothers, think of these things when afar off, whether on the Western Prairies or in the Sunny South, you have dealings with the suffering soldier. Bear ever with your steady, manly, surgeon's hand a tenderness, worthy to be remembered with that shown by the youthful Zouave for his dying comrade. Thus acting you will do honor to yourselves, to us, and *alma mater*. Above all, while doing your duty to God and to man, you will raise in the eyes of all beholders our "Most Noble Art of Medicine."

Gentlemen, farewell.

ADDITIONAL REMARKS;

OR,

A BRIEF PLEA FOR AN AMBULANCE SYSTEM

FOR THE

ARMY OF THE UNITED STATES,

AS DRAWN FROM THE EXTRA SUFFERINGS OF THE LATE LIEUT. BOWDITCH AND A WOUNDED COMRADE.

ADDITIONAL REMARKS

Or a brief Plea for an Ambulance System for the Army of the United States, as drawn from the extra sufferings of the late Lieut. Bowditch and a wounded comrade.

The foregoing address is printed, as will be seen by the annexed correspondence, in accordance with the wishes of the Graduating Medical Class of Harvard College, as expressed in its vote of March 11, 1863. The publication has been delayed, in consequence of my journey to the camp of the First Massachusetts Cavalry, to bring home the dead body of my eldest son, who had fallen, while leading a charge in this war for free institutions, and for liberty.

I little thought that, in less than one week from the hour at which I, in a few words, at the conclusion of my address, begged of the earnest youths, then before me, to do everything they could to alleviate the sufferings of the sick and wounded soldiers, I should have presented to me the terrible thought that my own son would, perhaps, need the care of stranger surgeons and soldiers for his own relief in his dying hour.

Since his death, I think that I stand in different, and, may I not say? somewhat wider relations, than

those I enjoyed from the teacher's chair. Resting as I now do under the solemn cloud-shadow of a great but benignant sorrow, I hope that some words I may now write, will reach beyond the confines of my profession, and touch other human intellects and hearts, — intellects and hearts of men and women, who will have influence upon those in power, and who will, with me, endeavor to *persuade our leaders to do simple justice toward every wounded soldier in the armies of the United States.*

May I not believe that now I can, of myself, exert a greater moral influence upon those in power, and that I can *now* do something — as all my previous efforts seem to have been vain — toward persuading the authorities to take *some* measures, that will secure to our wounded soldiers the *Nation's* fostering care, from the *first* moment of their fall upon the bloody field, until they arrive in our well supplied and most excellent hospitals.

This is not the case at present; for, under the want of all proper arrangements by the Government, a wounded soldier is liable to be left to suffer, and *die*, *it may be*, on the battle-ground, *without the least attention*, save what *common humanity* would lead one soldier to bestow upon a comrade.

This happens, first, because Congress steadily refuses to establish any definite and efficient Ambulance Corps in the armies of the Republic; second, because the War Department declines to do anything in the premises.

As an illustration of, and in addition to what has been already published by others, as well as by my-

self,* I beg leave to state that Lieut. Bowditch, having been mortally wounded, in the first charge made after leaving Kelly's Ford, lay helpless on the ground, for some time, by the side of his dead horse. Two surgeons saw him, but they evidently had no means for carrying off the wounded officer, and it is believed *no one connected with an Ambulance Corps ever approached him there.*†

A stranger horseman, — probably from the Rhode Island forces, — finally assisted him to get into a saddle; and he rode off, leaning over the neck of the animal, — a terrible mode of proceeding, considering his severe wound in the abdomen. All this happened *when he was in the rear of our victorious army*, or, in other words, at just the place and time, at which a thorough Ambulance Corps should have been busily at work, *seeking out*, and relieving, with every means *a great Government should have had at its disposal*, the wretched and, perhaps, dying sufferers. But what, in reality, does the Government do to meet such an emergency? It provides a carriage, which a perfectly healthy man would find exceedingly uncomfortable to drive in, even for a few miles, and one driver, sometimes not the most humane. There are, also, I doubt not, various articles of surgical dressings, etc., for the wounded; but these articles are generally far in the

* Appendix A.

† Three days after the fight, I heard several staff officers, — one of whom, certainly, was a surgeon, — talk, not as if they approved of the fact, but as if it were a matter of course, — saying that they "thought" a flag of truce ought to be sent over the river, to see to our wounded, many of whom were then, as they believed, still lying on the field!

rear of the army. The United States Government did not then, and never does, provide *any men*, whose duty it is to hasten to meet and to relieve these hours of poignant suffering. After Lieut. Bowditch arrived at the ambulance carriage, there was no water to be found in the casks, connected with it, although, by law, there should have been. The driver was wholly ignorant of the names of those whom he was carrying. He actually, and in answer to a direct question from Col. Curtis, denied that Lieut. Bowditch was one of them. He did not get any water for the Lieutenant and his still more suffering comrade, although both *longed and asked for it! A wretched and dying Sergeant begged much for it, and in vain!* Had it not been for the kindness of Col. Curtis, who, after *much difficulty*, found out where my son was, no water would probably have been procured for either of the parched sufferers. As it was, it arrived at last, *too late* for the Sergeant, who was so much exhausted as to be unable to avail himself of the cup, finally proffered him by his wounded comrade.

I mention these shortcomings, as I deem them, of the Administration and of Congress, with great reluctance, and without a trace of any feeling, save of sorrow. A few months ago, when treating of this same subject, I felt, and may have, at times, expressed, indignation, — not an unrighteous one, however, I hope, — at such neglect. Now, with the solemn memories of the past few weeks resting on me, I am sure that all will believe that sadness, not anger, must be uppermost in my mind. But I would fain plead, with all the earnestness a stricken father might be supposed to have,

when in sight of the mangled dead body of a darling, first-born son, that *such enormities, as are now liable to happen, under the present want of any proper ambulance system in the United States army, shall not be permitted hereafter.*

So far as the ensuing summer campaign is to be considered, it is already too late to do anything. The Senate of the United States, under the leadership of the Chairman of its Military Committee — an honorable Senator from Massachusetts — refused, a few days before the late Congress adjourned, to concur in the passage of a bill, previously passed, unanimously, by the House of Representatives. I am not an advocate of any *particular bill* or *special plan.* I only ask for *some system.* The Senate considered the plan proposed "impracticable," and therefore declined doing *anything!* * If all things were managed by mortals, according to such a mode of reasoning, very little progress would be made, very little humanity be practised, in this world. *The Senate and Government of this free people, decline to do for its citizen volunteer soldiery, what every despot of Europe carefully looks after, with reference to his conscripts or his hirelings!*

Some have asked, "But does not the Government do all it can? What do you want?" My reply is, a corps of detailed soldiers, or, what may be deemed better, a corps of honest, brave, and humane men, enlisted for this special duty, is needed. Such a corps exists in every army in Europe. I have now before me a pamphlet devoted solely to giving an account of the French and English ambulance systems. From it I will quote the following table:

* Appendix B.

TABLE A. General table, showing the formation, in the number of men employed, the amount and character of materials used, and the means of transportation, of an active ambulance service for a division of 10,000 men, and the sections of said ambulance service, that should follow the advancing columns of any smaller force.

	Ambulance Division for 10,000 men.		AMBULANCE SECTIONS FOR COLUMNS OF — 8 to 9,000 men.		6 to 7,000 men.		4 to 5,000 men.		2 to 3,000 men.		15 to 1800 men.		1,000 men.		OBSERVATIONS.
	Number.	Transport. Mules.	Number.	Transport. Mules.	Number.	Transport. Mules.	Number.	Transport. Mules.	Number.	Transport. Mules.	Number.	Transport. Mules.	Number.	Transport. Mules.	
Surgeon-in-Chief	1	..	1	..	1	..	1	..	1	..	..	..	..	..	
Head Apothecary	1	..	1	..	1	..	1	..	1	..	..	..	..	..	
First Assistant Surgeons	4	..	3	..	3	..	2	..	1	..	1	..	1	..	
Second Assistant Surgeons	10	..	8	..	8	..	6	..	4	..	2	..	1	..	
Chief Executive Officer	1	..	1	..	1	..	1	..	1	..	1	..	1	..	
Assistant Executive Officers	6	..	4	..	4	..	3	..	2	..	1	..	..	..	
Subordinate Assistants. Sergeants	6	..	4	..	4	..	4	..	3	..	1	..	1	..	
Subordinate Assistants. Corporals	8	..	6	..	6	..	4	..	4	..	2	..	1	..	
Subordinate Assistants. Soldiers	90	..	75	..	65	..	55	..	40	..	25	..	23	..	
Total	127	..	..	..		..		..		..		..		..	
HOSPITAL APPARATUS.	MULES AND ARTICLES NEEDED FOR AMBULANCE CAMP.														
Cases for the Surgical Department	8	4	8	4	6	3	6	3	4	2	2	1	2	1	The amounts given here apply to the ambulance supplies of columns acting within the limits of our outposts; that is to say, within reach of the centre of supplies.
" for the Dispensary	4	2	4	2	4	2	4	2	2	1	2	1	2	1	
" Exec. Dep't, implements and furniture,	12	6	10	5	10	5	10	5	8	4	4	2	2	1	
" of supplies for the Health Service	18	9	14	7	12	6	8	4	6	3	3	$1\frac{1}{2}$	3	$1\frac{1}{2}$	
" " " Exec. Service	22	11	20	10	16	8	14	7	8	4	6	3	4	2	
" for the Health and Executive Corps,	26	13	23	$11\frac{1}{2}$	22	11	18	9	14	7	8	4	5	$2\frac{1}{2}$	
Ambulance Casks	10	5	8	4	8	4	8	4	6	3	4	2	2	1	
Litters	20	2	16	2	16	2	12	1	10	1	6	$\frac{1}{2}$	5	$\frac{1}{2}$	

Blankets (baled, in packages of ten).....	200	10	180	9	160	8	140	7	120	6	100	5	6	3
" for the sick.....	30	2	28	1½	24	11	20	1	16	1	12	1	9	..
" for wrappers.....	20	1	18	1	16	1	14	1	12	..	16	..	6	..
Tents, holding 16 men each, and apparatus..	30	15	28	14	22	11	16	8	10	5	6	3	4	2
Bags for stakes and poles.....	8	4	6	3	6	3	4	2	4	2	2	1	1	1½
Transportation for the Sick.														
Transportation Train. Mule Litters (pairs).....	24	24	18	18	14	14	10	10	8	8	4	4	2	2
Transportation Train. Cushioned panniers (prs),	250	250	200	200	150	150	110	110	80	80	50	50	30	30
Transportation Train. Mules.....	6	6	6	6	6	6	4	4	4	4	2	2	1	1
Total.....	...	364		297		235								

For expeditions operating at a distance in the South, the number of cases of supplied must be increased sufficiently to receive a third more linen for wounds and a double supply of nutritious food. The number of cushioned panniers should be increased in the proportion of one-fifth, and the transport mules also in the same proportion.

AMOUNTS SUBSTITUTED FOR THE ABOVE, FOR AMBULANCES OF TROOPS ACTING IN THE SOUTH.

Cases of supplies for the Health Service...	26	13	20	16	16	8	21	6	8	4	5	2½	5	2½
" " " Exec. "	40	20	36	18	28	14	24	12	14	7	10	5	6	3
Cushioned panniers for mules' backs.....	300	300	250	200	200	200	150	150	120	120	90	90	70	70
	...	333	...	278	...	222	...	168	...	...	...	97½	...	75½
Report of the number of mules attached to other parts of the Ambulance Apparatus.	...	94	...	80	...	71	...	57	...	...	...	27½	...	16½
Total of mules for the Southern columns,	...	427	...	358	...	295	...	225	...	...	...	125	...	92

Remembering that there were about 2,000 Union men in the fight at Kelly's Ford, the reader will be easily able to judge how many men would have been actually detailed as an ambulance corps, and how much of "apparatus," &c., for the same object would have accompanied the expedition, if our Government had the views of the French Government on the necessity and humanity of taking care of our wounded. One would think that *self-interest* would lead any Government to try, as much as possible, to save a wounded soldier for future use, even if common humanity were left out of sight.

The pamphlet from which this table is taken is one of 70 pages octavo, and is written by Mons. Boudin, Chief Physician of the Military Hospital at Boule, Paris.*

From the table, the reader will see the number of officers and men and apparatus, connected with the ambulance service of the French army.

That service, it appears, is capable of being divided so that a certain portion of its effective force and supplies can be readily selected, at a short notice, for any number of regiments or brigades, &c.

The United States, doubtless, provides freely of supplies, but it steadily refuses to have any drilled corps to administer these supplies, in the most humane and most efficient manner. All is left, in a great measure, to chance!

A chance man carried Lieut. Bowditch from the field. Nothing scarcely was known until Col. Curtis sought for and found him, in the last carriage. The driver knew not whom he was carrying, though both of the wounded men were fully able to report their names and regiments. He had shamefully neglected to have water in his vehicle, or to get it for the sufferers, when one of them earnestly asked for it.

It may appear an absurdity to a military man, that a civilian should pretend to have any opinion upon the subject. But it seems to me that our immense armies need a corps of men for these special duties, of looking

* Système des Ambulances des Armées Française et Anglaise; Instructions qui règlent cette branche du service administratif et medical, par M. Boudin, Officier de la Legion d' Honneur, Medicin en chef de l' Hospital Militaire du Boule. Avec trois planches. Paris: J. B. Bailliere. 1855.

after the wounded soldier, as much as we need a special surgical corps, special paymasters, a special engineer corps, special men for cavalry, infantry, artillery service, &c. Certainly, the object is sufficiently great and humane. When thousands of men are inevitably to be wounded, it would seem to be perfectly suicidal in the Government, even in a selfish point of view, not to have a corps enlisted or detailed, to save as many as can be saved. As it is now, if a soldier be once put even temporarily, *hors du combat*, it would seem as if the Government were wholly indifferent whether he lived or died.

Again, by having such a corps, the number of combatants would not be so rapidly lessened, as it is now, by several men taking one wounded from the field.*

Such an ambulance corps should consist of able-bodied, brave men, — men not afraid to go to the front to save a fallen fellow-man. They should have a distinctive uniform. Arrangements might be concluded whereby the ambulance corps, in both armies, should be considered as the laws of war usually regard pickets, that is, as not to be molested in their specific duties, save perhaps, under extraordinary circumstances. Doubtless, many of such a body would fall, but it would be from random shots, and not from the voluntary barbarism of either army. It would be a brave, and noble, Christian death. Such a corps should take its place near the battle-field. It should be well trained to march, immediately to raise and carry off the wounded

* One surgeon told me he saw eight men carrying off one wounded soldier! Four were bearers — and four were intended for "relief" — and were walking by the hill, doing nothing. Few if any of these men returned to their posts.

with the least suffering possible. It could attend to minor points of surgery, and act as nurses, or cooks on the field, in tent, and in hospital, &c. Is it too much to hope that, at some future day, similar corps, from any two belligerent armies, will, under certain restrictions, be allowed to mingle together, upon the field, more immediately after the termination of a battle, than is now allowed? If, by mutual agreement between two contending parties, this object could be gained, a *vast* amount of *extra* suffering would be prevented, and, doubtless, many lives saved. There are hundreds of details, that might be named, in which such a corps would be invaluable. Every great European nation has such, in its armies, thoroughly trained. Why cannot we have such?

There *is* no *valid* reason. On the contrary, I have good reason for believing that it is the arbitrary will of one mind, and to which even Senators bow, that has prevented all action. Many persons have vainly appealed to the President. The Medical Societies of some of the large States have appealed to him, and to the War Department. Committees, and private citizens of New York and Boston have earnestly asked of Congress, of General Halleck, and of Mr. Stanton, to do *something*. All efforts, thus far, have been fruitless.

I now make one more appeal, but this time not to any one man, or to Congress, but to our Imperial "Cæsar," the People! The People must take this matter into its own hands, and *compel* the Government to look fairly at the whole subject.

The people are willing their sons should dedicate their young, heroic lives to this Holy War, this Blossom-

f Centuries. We have, even in our bereave-
heir death, a certain triumphant joy, if they, as
nts of High Heaven, be accounted worthy to
rs in so sacred a cause. But we have a right
d that they shall not be *needlessly tortured*, or thrown aside, like their own wounded steeds, to die perhaps by the wayside, for want of proper care from our Government. If any government under Heaven ought to be *paternal*, the United States authority, deriving, as it does, all its powers from the people, should surely be such, and should dispense that power, in full streams of benignant mercy upon its soldiers, when wounded in its defence.

I look forward, with dismay, at the *extra* suffering that may fall on thousands of the splendid youths, now in our army, during the ensuing summer campaign. Fortunately for the Army of the Potomac, as long ago as August last, General McClellan established a certain ambulance system of detailed soldiers, and under the enlightened suggestions of Dr. Letterman, Medical Director of the same army, I learn that much good was accomplished by it after the Fredericksburg fight. But the facts of my son's case have proved that the arrangements of the Army of the Potomac are still imperfect, and there are other armies, in which not even this imperfect system exists. I am authorized to state as the deliberate opinion of General McClellan himself, that the arrangements in vogue in the Army of the Potomac, while he was in command, might still be improved, he does not consider that by any means as complete.* It

* Appendix C. See letter from General McClellan.

was evidently introduced to meet a want, not radically to supply the deficiency. I rejoice however, to think that, under the present enlightened chieftain of the brave army, thus alluded to, Major-General Hooker, aided by members of his professional staff, an immense amount of suffering will be prevented. But this statement only brings out into bolder relief the utter chaos, that exists almost everywhere else along our lines ; a chaos only relieved by the fact that man's sufferings, the world over, always appeal to man. The wounded soldier *will* be taken some care of, *even when forsaken by his government !*

Let me not be misunderstood, I claim to be *intensely* loyal to this Administration. It is the government of my choice, I have been striving to get such a government, for over twenty years. I will ever do what I can to sustain it. But it will never do for me, with my views of honorable loyalty to a government, to keep out of sight such plain shortcomings on the part of those in power. More especially, do I feel called upon to speak and write plainly on this subject, because I believe that all that is really wanted is an enlightened public sentiment upon the matter. When that comes the Government will, of course, be compelled to attend to it. Let me not therefore be considered disloyal, when, while endeavoring to enlighten the people, I would also strive to make the Government, truly noble, generous, and humane, in this department of its administration. Those individuals are the really disloyal, who would check such endeavors.

I care, however, very little what interpretation may be put upon my conduct at the present time and in the

past, but I wish it fairly understood that I *cannot* do otherwise, and be true to the instincts, implanted in me as I believe, by God, for my guidance. Such being the fact, I shall always, on all proper and perhaps, on what, some may deem, improper occasions, continue to urge upon the public and upon the Government attention to this matter.

In conclusion, let me, therefore, earnestly appeal to every man and woman in this country, to do his or her share toward bringing about a better state of things. Let the hapless sufferings and bleeding forms of thousands of our noblest youth, wounded or slain in this holy war for the Republic's Life, and for human liberty, plead for this cause. Let every one, who has a friend now in the army, remember what that loved one may be called upon to endure, in consequence of this culpable neglect of those now in power. Every one of you has some influence. Let that influence, however great or trivial it may seem to yourself, be brought to bear, either by letter or by personal conversation, upon every member of the Government, the President and his Cabinet, and Senators and Representatives. Let the press be made to speak. The blessings of "him who is ready to perish," will fall like Heaven's own dew upon your hearts, if ye steadily and faithfully pursue this subject, and do your share toward its perfect accomplishment.

Even at this very hour, while these pages are passing through the press, the moans of thousands of our dying youth have been rising from the battle-fields of

Fredericksburg, begging each one of you [illegible] duty to them; and demand of our Senator [illegible] shall no longer decline to do *anything* to [illegible] lishing *some* ambulance system in the ar[illegible]e Republic. Do not, I beg of you, believe that [illegible]achusetts has done all her duty in this particular. On the contrary, she stands convicted of the fact that one Senator reported against a bill, and the other stood by at the time, and said not one word to prevent the atrocious neglect of a most plain duty on the part of Government. Our present State Executive has urged this subject, *again and again*, upon the President and those in power, but all in vain. Both Senators from Massachusetts are either dumb, or in open opposition to all action in the premises.

I am well aware that, when the cause itself rises, by its magnitude, far above all special individual relations, any *personal* remarks are usually to be avoided. There are times, however, when justice and humanity demand them, as in the prophetic days of old. I come as no prophet, but simply as a *man*, and while thus singling out the Massachusetts Senators, I do so from no other motive than to bring, more forcibly, to the minds and hearts of the loyal North, the gross dereliction of duty, evinced by *every* Senator from the Free States.

HENRY I. BOWDITCH.

Boylston Street, May 22, 1863.

APPENDIX.

A

The following are Reports of Drs. Stedman and Bowditch, who went with an ambulance train to the battle-field at Centreville. They are taken from Dr. Gay's Report to the War Committee of Ward IV. In introducing them, Dr. Gay says: "The statements in reference to the ambulance drivers demand universal action to instantly correct this brutal custom."

DR. GEORGE H. GAY: —

Dear Sir, — I beg to submit the following as a report of my experience during my late visit to the battle-field near Fairfax Court House, Va.

At 10 o'clock, Sept. 5, 1862, a message came to "Willard's," in Washington, from Surgeon-General Hammond, that two surgeons were much needed at a spot between Fairfax Court House and Centreville, where many soldiers lay wounded and starving. Dr. Bowditch and myself immediately volunteered our services, and at 11 P. M., we started in a train of fifty ambulances for the scene of suffering. The distance to be travelled was about twenty-two miles. The halts on the way were numerous, and some were prolonged most unnecessarily, as it seemed to us. The horses were stout, the weather cool till after sunrise, and then warm, but the heat not exhausting. At the end of the journey we were to find men dying from starvation and neglect of surgical attendance; and yet the horses must be allowed to walk a great portion of the way, and be watered every few miles, while the freight of each wagon was light. Beyond all example, the driver of the ambulance, in which it was my lot to ride, was the most vulgar, ignorant, and profane man I ever

came in contact with. But in contrast with him, th[illegible] the ambulance in which I returned, was one of [illegible] humane men. He had been a soldier in the regula[illegible] nine years — had been wounded in one of our earlies[illegible] and since his recovery had been employed as Governm[illegible] ster. On the wagon-master's command to him to drive faster, and keep up with the ambulances ahead of ours, he remonstrated, saying the men in his wagon were suffering intolerably already, and he did not intend to make them suffer more if he could prevent it. His expressions of sympathy were frequent, and doubtless afforded some consolation to the wounded. One or two other drivers, who came under my notice, behaved themselves with becoming humanity and gentleness in their assistance of the sufferers; though, as a body, these drivers were such as would disgrace, it may be, any menials ever sent out to the aid of the sick and wounded. The wagon-masters themselves, of whom we expected better things, were not overborne, apparently, by any deep sentiments of compassion for the sufferers. I noticed that in going to the battle-field they took no pains to hasten on the train. On the contrary, as before said, the halts were too frequent and prolonged. But in returning, though admonished by the groans of the soldiers, which were continuous from one end of the train to the other, they often urged the teamsters to drive faster.

On arriving at our place of destination, *lying about on the grass or in an old house and its out houses*, we found about one hundred and fifty soldiers, suffering from gunshot wounds of every description, inflicted five or six days before. Two had been shot through the lungs; one through both thighs and scrotum; some through the abdomen. In short, no part of the body had escaped. Four surgeons of the army were in attendance; but from want of food and sleep they were nearly exhausted; and being unable to perform but little duty, they requested me to remove some limbs, which operations were necessary to the more favorable transportation of the wounded to Washing-

ton. These were an amputation of the thigh, for a wound of the knee-joint and compound fracture of the former; and an amputation of an arm, for compound fracture and extensive laceration at elbow-joint.

And here let me notice the kind and assiduous attention to his wounded, of Dr. Joseph W. Hastings, Assistant-Surgeon, 21st Regiment, Massachusetts Volunteers, who was indefatigable in his service to all under his care. It was evident that his readiness, gentleness, and quiet cheerfulness, as well as skill and capacity, had won the gratitude of his regiment. I would not depreciate the merits of the other surgeons at this station. I speak thus of Dr. Hastings only because of my more frequent opportunities of witnessing his conduct.

On the following morning, after dressing many wounds, I accompanied Dr. H. to the rebel hospital, about four miles farther, on the Warrenton road, for the purpose of removing Capt. Kelton, of the 21st Regiment, whose thigh had been amputated by Dr. Miller, the rebel surgeon. We found four of our soldiers there, and about seventy-five wounded rebels, lying on the hay in a very comfortable stone barn. I observed that the medicines and surgical appliances used there had Philadelphia labels. Had they been captured, stolen, or smuggled? Our men expressed themselves gratified with the attention they had received from the rebel doctor; for which I could do no less than thank him. We then placed Capt. K. in the ambulance, and returned to our hospital.

In the afternoon we loaded the ambulances with the wounded, and at 4½ o'clock started for Washington, which, after a night of horror, made such by the cries and groans of the sufferers, the drunkenness, profanity, and inhumanity of the drivers, we reached about four o'clock the next morning. The men were deposited in the various hospitals in the city, and at noon I found some of them, those two especially upon whom I had operated, contented and cheerful as possible under the circumstances.

I shall never forget the anxiety with which I watched for the

safety of those two men. But one ligature had b[illegible]e fam- in securing the artery in the thigh. Suppose from [illegible] resist- jolting of the wagon, or from any other cause, [illegible]e should have come off; or that such should have b[illegible]e with the man whose arm had been lost, how could [illegible]n saved? No one ambulance would have been allo[illegible] to stop, as the whole train would have then been compelled to wait, and the sufferings of all the other wounded would have been increased or prolonged. Thank Heaven no such accident occurred, and I hope no one was permanently afflicted by this sad journey.

It will appear from this narration that our expedition to Virginia was not unattended with good results to those whose distresses we were called on to succor. For my own part, I feel that should the sad opportunity again offer itself, the experience I have thus gained would avail for a more satisfactory service than any before rendered.

Respectfully, your friend and servant,

C. H. Stedman.

At a meeting of the Boston Society for Medical Improvement, held Sept. 22, 1862, Dr. Bowditch remarked as follows:

"I desire to bring before the Society a subject of great importance to the future welfare of our wounded soldiers; although, at first sight, it may not seem exactly appropriate for a meeting of this Society.

"During my recent visit to Washington with other physicians, summoned there by the Secretary of War, I was brought immediately in contact with the abominable system, or rather no system, of ambulances now in use in our army. The atrocities I saw committed, are, I think, a sufficient reason for bringing the subject before you, in order that, either by the individual effort of the members, or by the united action of the Society, public opinion may be made so strong as to force the Government to devise some plan more in accordance with common humanity, and more truly military in its discipline.

[redacted]he evening of Friday, Sept. 5, at the request of the [redacted]-general, I joined an ambulance train that was just start[redacted]g to go to the relief of our starving and wounded men, near Centreville. There was a train of fifty carriages. I subsequently learned that three of the drivers, afraid of entering the enemy's lines, escaped with their ambulance wagons before we reached Long Bridge. This was easily accomplished, as there was no escort; and, as it subsequently appeared, no power to prevent such an event. It is true that an army-surgeon accompanied and gave general directions to the train, but he was in the first wagon, and could not know what was doing towards the end of the long train. I soon perceived that the drivers were men of the lowest character, evidently taken from the vilest purlieus of Washington, merely as common drivers, and for no other qualification. Their oaths were flaunted forth without the least regard to the presence of superiors, and with a profusion that was really remarkable, even in the vicinity of Washington. The driver of my ambulance became sleepy as the night wore on, and as his zigzag course over a Virginia road was rather perilous, and as he informed me that he had been overturned a few weeks previously, I thought it more prudent to drive myself, rather than to allow him to do so. While the moon was up, this was comparatively easy. He accordingly slept inside of the carriage until 3 or 4 A. M.; he then reluctantly again took the reins, because I was unwilling, owing to the darkness, to drive further. His whole deportment during the night showed a disregard for everything save his own comfort.

"Early in the forenoon, however, appeared on the part of the drivers of nearly one half the train, a total want of discipline, and a forgetfulness of the object and character of our mission, that seemed to me atrocious. Suddenly, I perceived one half of the train was stopping, and all the drivers leaving their carriages, rushed into an adjacent field, and there spent some minutes in stoning and shaking the trees in an apple and

peach orchard; and all this in the presence of part of th[redacted] ily of a Virginia planter! These individuals made no [redacted] ance. They apparently thought it would be of no use; for over all this road had the two armies swept again and again. In vain I pleaded that we were breaking the sacredness of the flag of truce, — that we richly deserved death for plundering private property. In vain I urged the inhumanity of leaving our suffering, starving soldiers, in order to fill their own greedy stomachs. I appealed to one of the three leaders who rode on horseback, and pretended to be the leaders of the train. He only smiled a smile of ineffable contempt, and munched his stolen apple with perfect *nonchalance*. Meanwhile the flag of truce was lost afar off in the distance, and our party was obliged to drive, for some time, with great rapidity in order to overtake it. Just as my carriage started, a heavy stone struck it not very far from my head. It had evidently been hurled, and *justly* hurled, at us for our infamous conduct. I remarked that hereafter I should know why our ambulances were fired upon by the enemy. The only answer I obtained was an oath.

"About mid-day we arrived, and found our men in a most piteous condition, lying everywhere, inside and outside of every building connected with a small farm-house. The negro-quarters was a palace, — the manure-heap was a soft bed. The fairest place was under a wide-spreading tree. I found the drivers did not feel it to be their duty to help the sufferers, but sulked, or swore, or laughed, as it pleased each. On the following morning, it is true, I did persuade my own driver to bring to me water, as I was dressing the wounds of the soldiers; but it was difficult even to get that, and he aided me because I asked him to do so, and not because he had any heart in the work.

"On Saturday, P. M., we started for Washington, — all the sick having been arranged in different ambulances, under charge of various surgeons. That night I shall never forget. I had taken one of those most severely wounded under my own

special charge. The ball had passed into his chest, and caused intense difficulty of breathing. He was a German, and one of the most uncomplaining of sufferers; and his broken words of gratitude for the slightest token of kindness, were most touching. None but a brute could have failed to be kind to him. He could lie only on one side, and consequently his head was placed directly behind my driver. During the first part of the way, I did not think that the driver paid the least attention to the road with reference to the comfort of the patient. In early night, his tongue ran glibly on in loud, indifferent talk, or the vilest profanity, — thus preventing all sleep. As the night progressed, I was distressed to find that the whiskey, with which he probably had supplied himself, was having its usual soporific effect, and he fell back upon the panting form of my patient. I lifted him up, and told him I could not allow such treatment of the sick man. The only response I got was a muttered oath of "men complaining," &c. But it was all in vain. Again and again did he fall back, until at last I took the reins, and drove most of the night with one hand, while with the other I supported this snoring drunkard!

"Of course, I repeated all these facts in a letter to the Surgeon-General. He assured me that I could not tell him anything new — that he had, months since, foretold to the Secretary of War the horrors, that would occur with such a set of wretches as usually were found in a body of ambulance drivers — that he had vainly endeavored to obtain *some system*, but there was none now. The whole of the ambulances are under the Quartermaster's department. He (the Surgeon-General,) had not the control of a single carriage. All his efforts had been in vain."

"I want now," continued Dr. Bowditch, "through this Society, to create a public sentiment that will compel the Government to attend to this matter, and to have a real ambulance corps. Dr. Hammond (the Surgeon-General) is not wedded to any plan; but he has suggested the appointment of six am-

bulances to each regiment, and three men to each ambulance, viz: one driver and two assistants. The latter would take the wounded, in a careful, methodical manner, from the field. This would prevent, in some measure, the soldiers from leaving their ranks, and would likewise be more humane for the wounded. All the corps would be under strict military discipline. But I repeat, all that is desired is, that some plan be adopted. Now all is chaos. I make no motion on this matter, but leave these facts before the Society, hoping that they will, in some way, tend to relieve our suffering soldiers."

Dr. J. Mason Warren moved that Dr. Bowditch be requested to reduce his remarks to writing, and that the facts be laid before the public in the journals of the day.

Dr. H. W. Williams moved that Dr. Bowditch be a Committee to report some plan of address to the Secretary of War, to be sent by the physicians of Massachusetts, in furtherance of some plan for the establishment of a United States Ambulance Corps.

S. L. Abbott, *Chairman of Meeting.*

Francis Minot, *Secretary.*

B

Mr. Wilson, of Massachusetts:

"The Committee on Military Affairs and the Militia, to whom was referred the bill (A. R. No. 719,) in relation to Military Hospitals and to organize an ambulance corps, have instructed me to report it back with a recommendation that it do not pass. I will not make the motion for its indefinite postponement, but let it go on the table.

"I will simply say that this bill has passed the House of Representatives, and the Committee on Military Affairs have considered it with a great deal of care. There is great interest in the country in regard to it, but we think it an impracticable measure to organize such a corps at this time."

[In the Senate, February 24, 1863.]

From Washington Globe.

C

New York, *February* 21, 1863.

Henry I. Bowditch, M. D., Boston.

My Dear Sir: I owe you an apology for my long delay in replying to your letter of the 2d, but it was mislaid, and I could not conveniently reply without the letter before me.

You ask me —

"1st. Is there at present any uniform ambulance system in the army of the United States?"

There is not, unless quite recently introduced.

"2d. Do you deem *any system* necessary?"

Clearly so. I think that any general officer who has served with troops in the field will declare such a system as essential, not only in regard to the comfort of sick and wounded, but to secure efficiency.

3d. Should the men in the ambulance corps be detailed soldiers, taken from time to time from the ranks; or should they be men enlisted for the purpose and taught their especial duties?

There are many self-evident objections to the system of taking men temporarily from the ranks for this duty; they need instructions in their peculiar functions, as well as the ordinary discipline, and should have a distinctive uniform. I am of the opinion that men should be enlisted especially for duty in the ambulance corps.

4th. Do you think the establishment of such a corps would increase the number of non-combatants?

I think it would *decrease* the number of non-combatants especially during battles.

In conclusion, I would beg to repeat what I have previously said to you in substance, that is, that I regard the formation of a well organized ambulance corps as one of the great desiderata for our armies.

Again, expressing my regret that I have so long delayed replying to your letter,

I am dear sir, very truly yours,

GEORGE B. McCLELLAN,

Major-General U. S. A.

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A BRIEF PLEA

FOR

AN AMBULANCE SYSTEM

FOR THE

ARMY OF THE UNITED STATES,

AS DRAWN FROM THE EXTRA SUFFERINGS OF THE LATE LIEUT. BOWDITCH AND A WOUNDED COMRADE.

BY

HENRY I. BOWDITCH, M. D.

PROFESSOR OF CLINICAL MEDICINE IN HARVARD COLLEGE.

BOSTON:

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To the Loyal and Humane Hearts of Northern Men and Women.

Some extra copies of this Plea for an Ambulance System in the United States Armies, are printed from an Appendix to a Valedictory Address, delivered before a Class of Medical Students.

I know of no other way, in which any man can fully act up to the duties of the hour, than by a faithful expression, in thought and action, of whatever his mind or his hands may find to do towards assisting the country and our brave army in their present trials.

Providentially, as I deem it, I have been twice brought to know the wretched want of system now existing in the arrangements for taking care of the wounded on the field of battle, viz: — during my visit to Centreville, in September last, and from the dying statements of my son.

I am fully sensible of the imperfections of this appeal to the men and women of the North. I make it, however, under a solemn sense of responsibility. I should be faithless to what I deem a high trust, were I to allow any fear of making an imperfect statement to deter me, and, on that account, should keep silence.

Let me earnestly appeal to all loyal and humane hearts to look into this matter for themselves, and then, I am sure, *something* will be done.

The responsibility for allowing these evils to continue, rests with *you*. I pray you not to fail of using your most active exertions to overcome them.

HENRY I. BOWDITCH.

A BRIEF PLEA

For an Ambulance System for the Army of the United States, as drawn from the extra sufferings of the late Lieut. Bowditch and a wounded comrade.

The foregoing address is printed, as will be seen by the annexed correspondence, in accordance with the wishes of the Graduating Medical Class of Harvard College, as expressed in its vote of March 11, 1863. The publication has been delayed, in consequence of my journey to the camp of the First Massachusetts Cavalry, to bring home the dead body of my eldest son, who had fallen, while leading a charge in this war for free institutions, and for liberty.

I little thought that, in less than one week from the hour at which I, in a few words, at the conclusion of my address, begged of the earnest youths, then before me, to do everything they could to alleviate the sufferings of the sick and wounded soldiers, I should have presented to me the terrible thought that my own son would, perhaps, need the care of stranger surgeons and soldiers for his own relief in his dying hour.

Since his death, I think that I stand in different, and, may I not say? somewhat wider relations, than

those I enjoyed from the teacher's chair. Resting as I now do under the solemn cloud-shadow of a great but benignant sorrow, I hope that some words I may now write, will reach beyond the confines of my profession, and touch other human intellects and hearts, — intellects and hearts of men and women, who will have influence upon those in power, and who will, with me, endeavor to *persuade our leaders to do simple justice toward every wounded soldier in the armies of the United States.*

May I not believe that now I can, of myself, exert a greater moral influence upon those in power, and that I can *now* do something — as all my previous efforts seem to have been vain — toward persuading the authorities to take *some* measures, that will secure to our wounded soldiers the *Nation's* fostering care, from the *first* moment of their fall upon the bloody field, until they arrive in our well supplied and most excellent hospitals.

This is not the case at present; for, under the want of all proper arrangements by the Government, a wounded soldier is liable to be left to suffer, and *die*, *it may be*, on the battle-ground, *without the least attention*, save what *common humanity* would lead one soldier to bestow upon a comrade.

This happens, first, because Congress steadily refuses to establish any definite and efficient Ambulance Corps in the armies of the Republic; second, because the War Department declines to do anything in the premises.

As an illustration of, and in addition to what has been already published by others, as well as by my-

self,* I beg leave to state that Lieut. Bowditch, having been mortally wounded, in the first charge made after leaving Kelly's Ford, lay helpless on the ground, for some time, by the side of his dead horse. Two surgeons saw him, but they evidently had no means for carrying off the wounded officer, and it is believed *no one connected with an Ambulance Corps ever approached him there.*†

A stranger horseman, — probably from the Rhode Island forces, — finally assisted him to get into a saddle ; and he rode off, leaning over the neck of the animal, — a terrible mode of proceeding, considering his severe wound in the abdomen. All this happened *when he was in the rear of our victorious army*, or, in other words, at just the place and time, at which a thorough Ambulance Corps should have been busily at work, *seeking out*, and relieving, with every means *a great Government should have had at its disposal*, the wretched and, perhaps, dying sufferers. But what, in reality, does the Government do to meet such an emergency? It provides a carriage, which a perfectly healthy man would find exceedingly uncomfortable to drive in, even for a few miles, and one driver, sometimes not the most humane. There are, also, I doubt not, various articles of surgical dressings, etc., for the wounded ; but these articles are generally far in the

* Appendix A.

† Three days after the fight, I heard several staff officers, — one of whom, certainly, was a surgeon, — talk, not as if they approved of the fact, but as if it were a matter of course, — saying that they "thought" a flag of truce ought to be sent over the river, to see to our wounded, many of whom were then, as they believed, still lying on the field!

rear of the army. The United States Government did not then, and never does, provide *any men*, whose duty it is to hasten to meet and to relieve these hours of poignant suffering. After Lieut. Bowditch arrived at the ambulance carriage, there was no water to be found in the casks, connected with it, although, by law, there should have been. The driver was wholly ignorant of the names of those whom he was carrying. He actually, and in answer to a direct question from Col. Curtis, denied that Lieut. Bowditch was one of them. He did not get any water for the Lieutenant and his still more suffering comrade, although both *longed and asked for it! A wretched and dying Sergeant begged much for it, and in vain!* Had it not been for the kindness of Col. Curtis, who, after *much difficulty*, found out where my son was, no water would probably have been procured for either of the parched sufferers. As it was, it arrived at last, *too late* for the Sergeant, who was so much exhausted as to be unable to avail himself of the cup, finally proffered him by his wounded comrade.

I mention these shortcomings, as I deem them, of the Administration and of Congress, with great reluctance, and without a trace of any feeling, save of sorrow. A few months ago, when treating of this same subject, I felt, and may have, at times, expressed, indignation, — not an unrighteous one, however, I hope, — at such neglect. Now, with the solemn memories of the past few weeks resting on me, I am sure that all will believe that sadness, not anger, must be uppermost in my mind. But I would fain plead, with all the earnestness a stricken father might be supposed to have,

when in sight of the mangled dead body of a darling, first-born son, that *such enormities, as are now liable to happen, under the present want of any proper ambulance system in the United States army, shall not be permitted hereafter.*

So far as the ensuing summer campaign is to be considered, it is already too late to do anything. The Senate of the United States, under the leadership of the Chairman of its Military Committee — an honorable Senator from Massachusetts — refused, a few days before the late Congress adjourned, to concur in the passage of a bill, previously passed, unanimously, by the House of Representatives. I am not an advocate of any *particular bill* or *special plan.* I only ask for *some system.* The Senate considered the plan proposed "impracticable," and therefore declined doing *anything!* * If all things were managed by mortals, according to such a mode of reasoning, very little progress would be made, very little humanity be practised, in this world. *The Senate and Government of this free people, decline to do for its citizen volunteer soldiery, what every despot of Europe carefully looks after, with reference to his conscripts or his hirelings!*

Some have asked, "But does not the Government do all it can? What do you want?" My reply is, a corps of detailed soldiers, or, what may be deemed better, a corps of honest, brave, and humane men, enlisted for this special duty, is needed. Such a corps exists in every army in Europe. I have now before me a pamphlet devoted solely to giving an account of the French and English ambulance systems. From it I will quote the following table:

* Appendix B.

TABLE A. General table, showing the formation, in the number of men employed, the amount and character of materials used, and the means of transportation, of an active ambulance service for a division of 10,000 men, and the sections of said ambulance service, that should follow the advancing columns of any smaller force.

	Ambulance Division for 10,000 men.		AMBULANCE SECTIONS FOR COLUMNS OF												OBSERVATIONS.
			8 to 9,000 men.		6 to 7,000 men.		4 to 5,000 men.		2 to 3,000 men.		15 to 1800 men.		1,000 men.		
	Number.	Transport. Mules.	Number.	Transport. Mules.	Number.	Transport. Mules.	Number.	Transport. Mules.	Number.	Transport. Mules.	Number.	Transport. Mules.	Number.	Transport. Mules.	
Surgeon-in-Chief	1	..	1	..	1	..	1	..	1	..	..	..	..	..	
Head Apothecary	1	..	1	..	1	..	1	..	1	..	..	..	..	..	
First Assistant Surgeons	4	..	3	..	3	..	2	..	1	..	1	..	1	..	
Second Assistant Surgeons	10	..	8	..	8	..	6	..	4	..	2	..	1	..	
Chief Executive Officer	1	..	1	..	1	..	1	..	1	..	1	..	1	..	
Assistant Executive Officers	6	..	4	..	4	..	3	..	2	..	1	..	..	..	
Subordinate Assistants. Sergeants	6	..	4	..	4	..	4	..	3	..	1	..	1	..	
Subordinate Assistants. Corporals	8	..	6	..	6	..	4	..	4	..	2	..	1	..	
Subordinate Assistants. Soldiers	90	..	75	..	65	..	55	..	40	..	25	..	23	..	
Total	127	..	..	..		..		..		..		..		..	
HOSPITAL APPARATUS.	MULES AND ARTICLES NEEDED FOR AMBULANCE CAMP.														
Cases for the Surgical Department	8	4	8	4	6	3	6	3	4	2	2	1	2	1	The amounts given here apply to the ambulance supplies of columns acting within the limits of our outposts; that is to say, within reach of the centre of supplies.
" for the Dispensary	4	2	4	2	4	2	4	2	2	1	2	1	2	1	
" Exec. Dep't, implements and furniture,	12	6	10	5	10	5	10	5	8	4	4	2	2	1	
" of supplies for the Health Service	18	9	14	7	12	6	8	4	6	3	3	1½	3	1½	
" " " Exec. Service	22	11	20	10	16	8	14	7	8	4	6	3	4	2	
" for the Health and Executive Corps,	26	13	23	11½	22	11	18	9	14	7	8	4	5	2½	
Ambulance Casks	10	5	8	4	8	4	8	4	6	3	4	2	2	1	
Litters	20	2	16	2	16	2	12	1	10	1	6	½	5	½	

Blankets (baled, in packages of ten).....	200	10	180	9	160	8	140	7	120	6	100	5	6	3
" for the sick.....	30	2	28	1½	24	11	20	1	16	1	12	1	9	..
" for wrappers.....	20	1	18	1	16	1	14	1	12	..	16	..	6	..
Tents, holding 16 men each, and apparatus..	30	15	28	14	22	11	16	8	10	5	6	3	4	2
Bags for stakes and poles.....	8	4	6	3	6	3	4	2	4	2	2	1	1	1½
Transportation for the Sick.														
Transportation Train. Mule Litters (pairs).....	24	24	18	18	14	14	10	10	8	8	4	4	2	2
Transportation Train. Cushioned panniers (prs),	250	250	200	200	150	150	110	110	80	80	50	50	30	30
Transportation Train. Mules.....	6	6	6	6	6	6	4	4	4	4	2	2	1	1
Total.....	...	364		297		235								

For expeditions operating at a distance in the South, the number of cases of supplied must be increased sufficiently to receive a third more linen for wounds and a double supply of nutritious food. The number of cushioned panniers should be increased in the proportion of one-fifth, and the transport mules also in the same proportion.

AMOUNTS SUBSTITUTED FOR THE ABOVE, FOR AMBULANCES OF TROOPS ACTING IN THE SOUTH.

Cases of supplies for the Health Service...	26	13	20	16	16	8	21	6	8	4	5	2⅓	5	2⅓
" " " Exec. "	40	20	36	18	28	14	24	12	14	7	10	5	6	3
Cushioned panniers for mules' backs.....	300	300	250	200	200	200	150	150	120	120	90	90	70	70
	...	333	...	278	...	222	...	168	...	...	...	97½	...	75½
Report of the number of mules attached to other parts of the Ambulance Apparatus.	...	94	...	80	...	71	...	57	...	...	...	27½	...	16½
Total of mules for the Southern columns,	...	427	...	358	...	295	...	225	...	...	...	125	...	92

Remembering that there were about 2,000 Union men in the fight at Kelly's Ford, the reader will be easily able to judge how many men would have been actually detailed as an ambulance corps, and how much of "apparatus," &c., for the same object would have accompanied the expedition, if our Government had the views of the French Government on the necessity and humanity of taking care of our wounded. One would think that *self-interest* would lead any Government to try, as much as possible, to save a wounded soldier for future use, even if common humanity were left out of sight.

The pamphlet from which this table is taken is one of 70 pages octavo, and is written by Mons. Boudin, Chief Physician of the Military Hospital at Boule, Paris.*

From the table, the reader will see the number of officers and men and apparatus, connected with the ambulance service of the French army.

That service, it appears, is capable of being divided so that a certain portion of its effective force and supplies can be readily selected, at a short notice, for any number of regiments or brigades, &c.

The United States, doubtless, provides freely of supplies, but it steadily refuses to have any drilled corps to administer these supplies, in the most humane and most efficient manner. All is left, in a great measure, to chance!

A chance man carried Lieut. Bowditch from the field. Nothing scarcely was known until Col. Curtis sought for and found him, in the last carriage. The driver knew not whom he was carrying, though both of the wounded men were fully able to report their names and regiments. He had shamefully neglected to have water in his vehicle, or to get it for the sufferers, when one of them earnestly asked for it.

It may appear an absurdity to a military man, that a civilian should pretend to have any opinion upon the subject. But it seems to me that our immense armies need a corps of men for these special duties, of looking

* Système des Ambulances des Armées Française et Anglaise; Instructions qui règlent cette branche du service administratif et medical, par M. Boudin, Officier de la Legion d' Honneur, Medicin en chef de l' Hospital Militaire du Boule. Avec trois planches. Paris: J. B. Bailliere. 1855.

after the wounded soldier, as much as we need a special surgical corps, special paymasters, a special engineer corps, special men for cavalry, infantry, artillery service, &c. Certainly, the object is sufficiently great and humane. When thousands of men are inevitably to be wounded, it would seem to be perfectly suicidal in the Government, even in a selfish point of view, not to have a corps enlisted or detailed, to save as many as can be saved. As it is now, if a soldier be once put even temporarily, *hors du combat*, it would seem as if the Government were wholly indifferent whether he lived or died.

Again, by having such a corps, the number of combatants would not be so rapidly lessened, as it is now, by several men taking one wounded from the field.*

Such an ambulance corps should consist of able-bodied, brave men, — men not afraid to go to the front to save a fallen fellow-man. They should have a distinctive uniform. Arrangements might be concluded whereby the ambulance corps, in both armies, should be considered as the laws of war usually regard pickets, that is, as not to be molested in their specific duties, save perhaps, under extraordinary circumstances. Doubtless, many of such a body would fall, but it would be from random shots, and not from the voluntary barbarism of either army. It would be a brave, and noble, Christian death. Such a corps should take its place near the battle-field. It should be well trained to march, immediately to raise and carry off the wounded

* One surgeon told me he saw eight men carrying off one wounded soldier! Four were bearers — and four were intended for "relief" — and were walking by the hill, doing nothing. Few if any of these men returned to their posts.

with the least suffering possible. It could attend to minor points of surgery, and act as nurses, or cooks on the field, in tent, and in hospital, &c. Is it too much to hope that, at some future day, similar corps, from any two belligerent armies, will, under certain restrictions, be allowed to mingle together, upon the field, more immediately after the termination of a battle, than is now allowed? If, by mutual agreement between two contending parties, this object could be gained, a *vast* amount of *extra* suffering would be prevented, and, doubtless, many lives saved. There are hundreds of details, that might be named, in which such a corps would be invaluable. Every great European nation has such, in its armies, thoroughly trained. Why cannot we have such?

There *is* no *valid* reason. On the contrary, I have good reason for believing that it is the arbitrary will of one mind, and to which even Senators bow, that has prevented all action. Many persons have vainly appealed to the President. The Medical Societies of some of the large States have appealed to him, and to the War Department. Committees, and private citizens of New York and Boston have earnestly asked of Congress, of General Halleck, and of Mr. Stanton, to do *something*. All efforts, thus far, have been fruitless.

I now make one more appeal, but this time not to any one man, or to Congress, but to our Imperial "Cæsar," the People! The People must take this matter into its own hands, and *compel* the Government to look fairly at the whole subject.

The people are willing their sons should dedicate their young, heroic lives to this Holy War, this Blossom-

ing-out of Centuries. We have, even in our bereavement at their death, a certain triumphant joy, if they, as instruments of High Heaven, be accounted worthy to be martyrs in so sacred a cause. But we have a right to demand that they shall not be *needlessly tortured*, or thrown aside, like their own wounded steeds, to die perhaps by the wayside, for want of proper care from our Government. If any government under Heaven ought to be *paternal*, the United States authority, deriving, as it does, all its powers from the people, should surely be such, and should dispense that power, in full streams of benignant mercy upon its soldiers, when wounded in its defence.

I look forward, with dismay, at the *extra* suffering that may fall on thousands of the splendid youths, now in our army, during the ensuing summer campaign. Fortunately for the Army of the Potomac, as long ago as August last, General McClellan established a certain ambulance system of detailed soldiers, and under the enlightened suggestions of Dr. Letterman, Medical Director of the same army, I learn that much good was accomplished by it after the Fredericksburg fight. But the facts of my son's case have proved that the arrangements of the Army of the Potomac are still imperfect, and there are other armies, in which not even this imperfect system exists. I am authorized to state as the deliberate opinion of General McClellan himself, that the arrangements in vogue in the Army of the Potomac, while he was in command, might still be improved, he does not consider that by any means as complete.* It

* Appendix C. See letter from General McClellan.

was evidently introduced to meet a want, not radically to supply the deficiency. I rejoice however, to think that, under the present enlightened chieftain of the brave army, thus alluded to, Major-General Hooker, aided by members of his professional staff, an immense amount of suffering will be prevented. But this statement only brings out into bolder relief the utter chaos, that exists almost everywhere else along our lines ; a chaos only relieved by the fact that man's sufferings, the world over, always appeal to man. The wounded soldier *will* be taken some care of, *even when forsaken by his government !*

Let me not be misunderstood, I claim to be *intensely* loyal to this Administration. It is the government of my choice, I have been striving to get such a government, for over twenty years. I will ever do what I can to sustain it. But it will never do for me, with my views of honorable loyalty to a government, to keep out of sight such plain shortcomings on the part of those in power. More especially, do I feel called upon to speak and write plainly on this subject, because I believe that all that is really wanted is an enlightened public sentiment upon the matter. When that comes the Government will, of course, be compelled to attend to it. Let me not therefore be considered disloyal, when, while endeavoring to enlighten the people, I would also strive to make the Government, truly noble, generous, and humane, in this department of its administration. Those individuals are the really disloyal, who would check such endeavors.

I care, however, very little what interpretation may be put upon my conduct at the present time and in the

past, but I wish it fairly understood that I *cannot* do otherwise, and be true to the instincts, implanted in me as I believe, by God, for my guidance. Such being the fact, I shall always, on all proper and perhaps, on what, some may deem, improper occasions, continue to urge upon the public and upon the Government attention to this matter.

In conclusion, let me, therefore, earnestly appeal to every man and woman in this country, to do his or her share toward bringing about a better state of things. Let the hapless sufferings and bleeding forms of thousands of our noblest youth, wounded or slain in this holy war for the Republic's Life, and for human liberty, plead for this cause. Let every one, who has a friend now in the army, remember what that loved one may be called upon to endure, in consequence of this culpable neglect of those now in power. Every one of you has some influence. Let that influence, however great or trivial it may seem to yourself, be brought to bear, either by letter or by personal conversation, upon every member of the Government, the President and his Cabinet, and Senators and Representatives. Let the press be made to speak. The blessings of "him who is ready to perish," will fall like Heaven's own dew upon your hearts, if ye steadily and faithfully pursue this subject, and do your share toward its perfect accomplishment.

Even at this very hour, while these pages are passing through the press, the moans of thousands of our dying youth have been rising from the battle-fields of

Fredericksburg, begging each one of you to do your duty to them; and demand of our Senators that they shall no longer decline to do *anything* toward establishing *some* ambulance system in the armies of the Republic. Do not, I beg of you, believe that Massachusetts has done all her duty in this particular. On the contrary, she stands convicted of the fact that one Senator reported against a bill, and the other stood by at the time, and said not one word to prevent the atrocious neglect of a most plain duty on the part of Government. Our present State Executive has urged this subject, *again and again*, upon the President and those in power, but all in vain. Both Senators from Massachusetts are either dumb, or in open opposition to all action in the premises.

I am well aware that, when the cause itself rises, by its magnitude, far above all special individual relations, any *personal* remarks are usually to be avoided. There are times, however, when justice and humanity demand them, as in the prophetic days of old. I come as no prophet, but simply as a *man*, and while thus singling out the Massachusetts Senators, I do so from no other motive than to bring, more forcibly, to the minds and hearts of the loyal North, the gross dereliction of duty, evinced by *every* Senator from the Free States.

HENRY I. BOWDITCH.

Boylston Street, May 22, 1863.

APPENDIX.

A

The following are Reports of Drs. Stedman and Bowditch, who went with an ambulance train to the battle-field at Centreville. They are taken from Dr. Gay's Report to the War Committee of Ward IV. In introducing them, Dr. Gay says: "The statements in reference to the ambulance drivers demand universal action to instantly correct this brutal custom."

Dr. George H. Gay: —

Dear Sir, — I beg to submit the following as a report of my experience during my late visit to the battle-field near Fairfax Court House, Va.

At 10 o'clock, Sept. 5, 1862, a message came to "Willard's," in Washington, from Surgeon-General Hammond, that two surgeons were much needed at a spot between Fairfax Court House and Centreville, where many soldiers lay wounded and starving. Dr. Bowditch and myself immediately volunteered our services, and at 11 P. M., we started in a train of fifty ambulances for the scene of suffering. The distance to be travelled was about twenty-two miles. The halts on the way were numerous, and some were prolonged most unnecessarily, as it seemed to us. The horses were stout, the weather cool till after sunrise, and then warm, but the heat not exhausting. At the end of the journey we were to find men dying from starvation and neglect of surgical attendance; and yet the horses must be allowed to walk a great portion of the way, and be watered every few miles, while the freight of each wagon was light. Beyond all example, the driver of the ambulance, in which it was my lot to ride, was the most vulgar, ignorant, and profane man I ever

came in contact with. But in contrast with him, the driver of the ambulance in which I returned, was one of the most humane men. He had been a soldier in the regular army for nine years — had been wounded in one of our earliest battles — and since his recovery had been employed as Government teamster. On the wagon-master's command to him to drive faster, and keep up with the ambulances ahead of ours, he remonstrated, saying the men in his wagon were suffering intolerably already, and he did not intend to make them suffer more if he could prevent it. His expressions of sympathy were frequent, and doubtless afforded some consolation to the wounded. One or two other drivers, who came under my notice, behaved themselves with becoming humanity and gentleness in their assistance of the sufferers; though, as a body, these drivers were such as would disgrace, it may be, any menials ever sent out to the aid of the sick and wounded. The wagon-masters themselves, of whom we expected better things, were not overborne, apparently, by any deep sentiments of compassion for the sufferers. I noticed that in going to the battle-field they took no pains to hasten on the train. On the contrary, as before said, the halts were too frequent and prolonged. But in returning, though admonished by the groans of the soldiers, which were continuous from one end of the train to the other, they often urged the teamsters to drive faster.

On arriving at our place of destination, *lying about on the grass or in an old house and its out houses*, we found about one hundred and fifty soldiers, suffering from gunshot wounds of every description, inflicted five or six days before. Two had been shot through the lungs; one through both thighs and scrotum; some through the abdomen. In short, no part of the body had escaped. Four surgeons of the army were in attendance; but from want of food and sleep they were nearly exhausted; and being unable to perform but little duty, they requested me to remove some limbs, which operations were necessary to the more favorable transportation of the wounded to Washing-

ton. These were an amputation of the thigh, for a wound of the knee-joint and compound fracture of the former; and an amputation of an arm, for compound fracture and extensive laceration at elbow-joint.

And here let me notice the kind and assiduous attention to his wounded, of Dr. Joseph W. Hastings, Assistant-Surgeon, 21st Regiment, Massachusetts Volunteers, who was indefatigable in his service to all under his care. It was evident that his readiness, gentleness, and quiet cheerfulness, as well as skill and capacity, had won the gratitude of his regiment. I would not depreciate the merits of the other surgeons at this station. I speak thus of Dr. Hastings only because of my more frequent opportunities of witnessing his conduct.

On the following morning, after dressing many wounds, I accompanied Dr. H. to the rebel hospital, about four miles farther, on the Warrenton road, for the purpose of removing Capt. Kelton, of the 21st Regiment, whose thigh had been amputated by Dr. Miller, the rebel surgeon. We found four of our soldiers there, and about seventy-five wounded rebels, lying on the hay in a very comfortable stone barn. I observed that the medicines and surgical appliances used there had Philadelphia labels. Had they been captured, stolen, or smuggled? Our men expressed themselves gratified with the attention they had received from the rebel doctor; for which I could do no less than thank him. We then placed Capt. K. in the ambulance, and returned to our hospital.

In the afternoon we loaded the ambulances with the wounded, and at 4½ o'clock started for Washington, which, after a night of horror, made such by the cries and groans of the sufferers, the drunkenness, profanity, and inhumanity of the drivers, we reached about four o'clock the next morning. The men were deposited in the various hospitals in the city, and at noon I found some of them, those two especially upon whom I had operated, contented and cheerful as possible under the circumstances.

I shall never forget the anxiety with which I watched for the

safety of those two men. But one ligature had been required in securing the artery in the thigh. Suppose from the constant jolting of the wagon, or from any other cause, that ligature should have come off; or that such should have been the case with the man whose arm had been lost, how could life have been saved? No one ambulance would have been allowed to stop, as the whole train would have then been compelled to wait, and the sufferings of all the other wounded would have been increased or prolonged. Thank Heaven no such accident occurred, and I hope no one was permanently afflicted by this sad journey.

It will appear from this narration that our expedition to Virginia was not unattended with good results to those whose distresses we were called on to succor. For my own part, I feel that should the sad opportunity again offer itself, the experience I have thus gained would avail for a more satisfactory service than any before rendered.

Respectfully, your friend and servant,

C. H. Stedman.

At a meeting of the Boston Society for Medical Improvement, held Sept. 22, 1862, Dr. Bowditch remarked as follows:

"I desire to bring before the Society a subject of great importance to the future welfare of our wounded soldiers; although, at first sight, it may not seem exactly appropriate for a meeting of this Society.

"During my recent visit to Washington with other physicians, summoned there by the Secretary of War, I was brought immediately in contact with the abominable system, or rather no system, of ambulances now in use in our army. The atrocities I saw committed, are, I think, a sufficient reason for bringing the subject before you, in order that, either by the individual effort of the members, or by the united action of the Society, public opinion may be made so strong as to force the Government to devise some plan more in accordance with common humanity, and more truly military in its discipline.

"On the evening of Friday, Sept. 5, at the request of the surgeon-general, I joined an ambulance train that was just starting to go to the relief of our starving and wounded men, near Centreville. There was a train of fifty carriages. I subsequently learned that three of the drivers, afraid of entering the enemy's lines, escaped with their ambulance wagons before we reached Long Bridge. This was easily accomplished, as there was no escort; and, as it subsequently appeared, no power to prevent such an event. It is true that an army-surgeon accompanied and gave general directions to the train, but he was in the first wagon, and could not know what was doing towards the end of the long train. I soon perceived that the drivers were men of the lowest character, evidently taken from the vilest purlieus of Washington, merely as common drivers, and for no other qualification. Their oaths were flaunted forth without the least regard to the presence of superiors, and with a profusion that was really remarkable, even in the vicinity of Washington. The driver of my ambulance became sleepy as the night wore on, and as his zigzag course over a Virginia road was rather perilous, and as he informed me that he had been overturned a few weeks previously, I thought it more prudent to drive myself, rather than to allow him to do so. While the moon was up, this was comparatively easy. He accordingly slept inside of the carriage until 3 or 4 A. M.; he then reluctantly again took the reins, because I was unwilling, owing to the darkness, to drive further. His whole deportment during the night showed a disregard for everything save his own comfort.

"Early in the forenoon, however, appeared on the part of the drivers of nearly one half the train, a total want of discipline, and a forgetfulness of the object and character of our mission, that seemed to me atrocious. Suddenly, I perceived one half of the train was stopping, and all the drivers leaving their carriages, rushed into an adjacent field, and there spent some minutes in stoning and shaking the trees in an apple and

peach orchard; and all this in the presence of part of the family of a Virginia planter! These individuals made no resistance. They apparently thought it would be of no use; for over all this road had the two armies swept again and again. In vain I pleaded that we were breaking the sacredness of the flag of truce, — that we richly deserved death for plundering private property. In vain I urged the inhumanity of leaving our suffering, starving soldiers, in order to fill their own greedy stomachs. I appealed to one of the three leaders who rode on horseback, and pretended to be the leaders of the train. He only smiled a smile of ineffable contempt, and munched his stolen apple with perfect *nonchalance*. Meanwhile the flag of truce was lost afar off in the distance, and our party was obliged to drive, for some time, with great rapidity in order to overtake it. Just as my carriage started, a heavy stone struck it not very far from my head. It had evidently been hurled, and *justly* hurled, at us for our infamous conduct. I remarked that hereafter I should know why our ambulances were fired upon by the enemy. The only answer I obtained was an oath.

"About mid-day we arrived, and found our men in a most piteous condition, lying everywhere, inside and outside of every building connected with a small farm-house. The negro-quarters was a palace, — the manure-heap was a soft bed. The fairest place was under a wide-spreading tree. I found the drivers did not feel it to be their duty to help the sufferers, but sulked, or swore, or laughed, as it pleased each. On the following morning, it is true, I did persuade my own driver to bring to me water, as I was dressing the wounds of the soldiers; but it was difficult even to get that, and he aided me because I asked him to do so, and not because he had any heart in the work.

"On Saturday, P. M., we started for Washington, — all the sick having been arranged in different ambulances, under charge of various surgeons. That night I shall never forget. I had taken one of those most severely wounded under my own

special charge. The ball had passed into his chest, and caused intense difficulty of breathing. He was a German, and one of the most uncomplaining of sufferers; and his broken words of gratitude for the slightest token of kindness, were most touching. None but a brute could have failed to be kind to him. He could lie only on one side, and consequently his head was placed directly behind my driver. During the first part of the way, I did not think that the driver paid the least attention to the road with reference to the comfort of the patient. In early night, his tongue ran glibly on in loud, indifferent talk, or the vilest profanity, — thus preventing all sleep. As the night progressed, I was distressed to find that the whiskey, with which he probably had supplied himself, was having its usual soporific effect, and he fell back upon the panting form of my patient. 1 lifted him up, and told him I could not allow such treatment of the sick man. The only response I got was a muttered oath of "men complaining," &c. But it was all in vain. Again and again did he fall back, until at last I took the reins, and drove most of the night with one hand, while with the other I supported this snoring drunkard!

"Of course, I repeated all these facts in a letter to the Surgeon-General. He assured me that I could not tell him anything new — that he had, months since, foretold to the Secretary of War the horrors, that would occur with such a set of wretches as usually were found in a body of ambulance drivers — that he had vainly endeavored to obtain *some system*, but there was none now. The whole of the ambulances are under the Quartermaster's department. He (the Surgeon-General,) had not the control of a single carriage. All his efforts had been in vain."

"I want now," continued Dr. Bowditch, "through this Society, to create a public sentiment that will compel the Government to attend to this matter, and to have a real ambulance corps. Dr. Hammond (the Surgeon-General) is not wedded to any plan; but he has suggested the appointment of six am-

bulances to each regiment, and three men to each ambulance, viz: one driver and two assistants. The latter would take the wounded, in a careful, methodical manner, from the field. This would prevent, in some measure, the soldiers from leaving their ranks, and would likewise be more humane for the wounded. All the corps would be under strict military discipline. But I repeat, all that is desired is, that some plan be adopted. Now all is chaos. I make no motion on this matter, but leave these facts before the Society, hoping that they will, in some way, tend to relieve our suffering soldiers."

Dr. J. Mason Warren moved that Dr. Bowditch be requested to reduce his remarks to writing, and that the facts be laid before the public in the journals of the day.

Dr. H. W. Williams moved that Dr. Bowditch be a Committee to report some plan of address to the Secretary of War, to be sent by the physicians of Massachusetts, in furtherance of some plan for the establishment of a United States Ambulance Corps.

S. L. Abbott, *Chairman of Meeting.*

Francis Minot, *Secretary.*

B

Mr. Wilson, of Massachusetts:

"The Committee on Military Affairs and the Militia, to whom was referred the bill (A. R. No. 719,) in relation to Military Hospitals and to organize an ambulance corps, have instructed me to report it back with a recommendation that it do not pass. I will not make the motion for its indefinite postponement, but let it go on the table.

"I will simply say that this bill has passed the House of Representatives, and the Committee on Military Affairs have considered it with a great deal of care. There is great interest in the country in regard to it, but we think it an impracticable measure to organize such a corps at this time."

[In the Senate, February 24, 1863.]

From Washington Globe.

C

New York, *February* 21, 1863.

Henry I. Bowditch, M. D., Boston.

My Dear Sir: I owe you an apology for my long delay in replying to your letter of the 2d, but it was mislaid, and I could not conveniently reply without the letter before me.

You ask me —

"1st. Is there at present any uniform ambulance system in the army of the United States?"

There is not, unless quite recently introduced.

"2d. Do you deem *any system* necessary?"

Clearly so. I think that any general officer who has served with troops in the field will declare such a system as essential, not only in regard to the comfort of sick and wounded, but to secure efficiency.

3d. Should the men in the ambulance corps be detailed soldiers, taken from time to time from the ranks; or should they be men enlisted for the purpose and taught their especial duties?

There are many self-evident objections to the system of taking men temporarily from the ranks for this duty; they need instructions in their peculiar functions, as well as the ordinary discipline, and should have a distinctive uniform. I am of the opinion that men should be enlisted especially for duty in the ambulance corps.

4th. Do you think the establishment of such a corps would increase the number of non-combatants?

I think it would *decrease* the number of non-combatants especially during battles.

In conclusion, I would beg to repeat what I have previously said to you in substance, that is, that I regard the formation of a well organized ambulance corps as one of the great desiderata for our armies.

Again, expressing my regret that I have so long delayed replying to your letter,

I am dear sir, very truly yours,

GEORGE B. McCLELLAN,

Major-General U. S. A.

5798.12

[*From the "Boston Medical and Surgical Journal" of October* 9, 1862.]

Abuse of Army Ambulances.—In the interesting communication of Dr. Bowditch, on the subject of the want of system in the ambulance arrangements of the United States Army, published by us two weeks since, several details of the recklessness of the drivers, as mentioned by him at the meeting of the Society for Medical Improvement, were omitted. In our opinion these facts should be known, as furnishing additional evidence of the need of thorough reform in this department. Dr. Bowditch particularly dwelt upon the malicious pleasure which the drunken drivers took in doing all the damage they could to the valuable vehicles entrusted to them, by the most unnecessary collisions. One special source of amusement to them was to try to drive the pole of the ambulance into the back of the one in front, and it was a particularly gratifying evidence of skill, if the driver succeeded in striking the head of the cask placed beneath the seats and projecting slightly at the back of the vehicle, and intended to hold water for the use of the wounded. This triumphant tilt was run by the man in charge of the ambulance in which Dr. Bowditch was riding, with the successful result of knocking it from its attachments into the road, where it was left, as none of the men would take the trouble to replace it. We say casks *intended* to hold water. In the present instance, it happened that not one in the whole train would do this; they had all been allowed to dry until they were as leaky as so many sieves; so that their loss was not a matter of such moment as it might have been. Mentioning the circumstance a few days since to a friend who had been in the army, he remarked, that he never saw an ambulance cask yet that *would* hold water.

Dr. Bowditch also referred to the extreme danger, incurred by the sleepy and drunken drivers, of running their vehicles off the precipitous banks on either side of the road, and said that the leader of the train informed him that, a short time before, he barely had time to turn aside the horses attached to an ambulance, full of wounded, from the brink of a precipice twenty feet high, over which the whole would have gone the next moment. The driver was asleep! Truly who can doubt the need of a thorough reform of such outrageous abuses?

Thus much had we written, when we received the following communication from Dr. Bowditch, to which we gladly give place.—Ed.

It is painful, yet it ought not to surprise us, to see how many mistakes have necessarily arisen, during this terrible rebellion, owing, first, to the utter disbelief on the part of the North in the really revolutionary views of the Southern leaders; second, to our own igno-

rance of the arts of war, and of the means of alleviating the sufferings incident thereto; and third, to the fact that, in very many instances, we still endeavor to manage an army of more than half a million of men by rules of war established for a few thousands. In nothing, perhaps, have we suffered more, from the last two causes, than in the whole arrangements for the transportation and care of the sick and wounded on and from the battle-field. It would, *a priori*, seem natural that the first thought of a truly paternal government, after having made arrangements to strike a decisive blow against an enemy, would be to make most ample provision to alleviate the sufferings of those of its children who would necessarily be doomed to endure much, even under the best system that could be devised. No *extra* suffering, and every alleviation of absolute misery, should be the watchword on such an occasion. I regret extremely to feel that, judged by this rule, our government has heretofore totally failed in one department, at least, of its service, viz., the ambulance system, or no system, as it may more properly be called.

The extraordinary statements by Dr. Coolidge, Medical Director at Centreville, that the drivers of the ambulances broke into the hospital stores, drank the liquors and would not help the wounded until whiskey was given; my own account (see this JOURNAL, Sept. 25) of the abominable misdeeds of these same or similar miscreants, during our excursion to relieve the starving and wounded at Chantilly, near Centreville; and finally, numerous individual statements (*New York Times* and also *Medical Times*), confirmatory of the same fact of gross misconduct, and of the essentially degraded character of most of these drivers; all these things are my reason for bringing the subject again before the readers of the JOURNAL. *Some change must be effected.* I am thankful to see that correspondents in different journals in this city and New York, are discussing various plans, and as the great object we now ought to have in view is to have *some* plan, instead of *chaos*, as at present, I write the following brief abstract of what foreign governments and our own have done in the premises, and will finish with giving what I know to be the carefully thought-out suggestions of the present humane and able Surgeon-General Hammond.

On the 2d of April, 1855—only six years ago—Jefferson Davis issued his instructions to Majors Delafield and Mordecai, and Capt. G. B. McClellan, to visit Europe for the purpose of learning everything possible, relative to modern systems of warfare. The Crimean war was then in full operation, and Sebastopol was besieged. Every subject connected with the carrying on of war was carefully suggested for investigation in the instructions given to the Committee. One item among them was as follows:—"The kind of ambulances or other means used for transporting the sick and wounded."

Capt. (now United States Major-General) McClellan, makes no allusion to the subject in his "Armies of Europe." Of Major Mordecai's opinion, I know nothing. But the following, from Major Delafield's report (*Senate Document*, June, 1860), becomes important in considering the question of what we should do, in the present emergency.

Major D. says, page 68, that "never before was so much attention paid to this branch of the military service" as during this celebrated siege, and in front of Sebastopol. And in this connection he pays a

high tribute to that remarkable woman, Florence Nightingale, "as the foundation of power, from which all the new arrangements and appliances emanated." It seems that several kinds of *carriages* were used among the allied and Russian armies, according to the ideas of those having the control of each. The smaller ones, those capable of passing and repassing anywhere, were the best. Wrought-iron *chairs* or *litters*, two hung like *pack-saddles* upon mules' backs, were of great service. One hundred and sixteen chairs or litters were in use at the bloody battle of Inkermann, and sufficed to transport all the men in a very short time after the action terminated; "proving," says Major D., "that they combined greater advantages than any previous arrangement."

The English organized a "brigade for hospital conveyance"—(*Report*, p. 75), which was new in *personnel* and *materiel*. Its train consisted of twenty carts, five store wagons, one forge cart, and one cart for stoves and portable forge." The carts were for two, the wagons for four horses. The whole were for twelve regiments. The plan was contrived so that where a gun could go, a carriage could follow.

The following extract (p. 76), I desire to bring to the notice of the reader. Jefferson Davis undoubtedly took counsel from the whole of this valuable report, in plotting his treason. Our government seem to have lost sight of its valuable suggestions, in one instance, at least, as is now well proved:—"The whole of this train was under the *Staff-Surgeon* of the division; none of the wagons, carts or drivers being subject to the orders of any other department, except with the authority of the General of Division, who best knew when to break up or sacrifice any part of his entire means of transport. *This provision is worthy of our attention. The details and requirements of this part of the service should not constitute a part of the general transport service of the army, as heretofore has been the case in our service. No person can so well preserve the efficiency of the surgical and medical apparatus, as he who best knows its uses.*"

The italics are my own, and I would simply add that there never was a more striking exemplification of the truth of these remarks by Major Delafield, than what I saw, in striking contrast to them, during my recent ambulance journey to Centreville. Among other things, at that time, I observed that of the small casks intended for water, and two of which were prepared for each wagon, not one seemed to contain water; and I was informed by the army surgeon in command, that they all leaked! What does the Quartermaster care for them? The absolute need of water for the thirsty, wounded or dying soldiers, would never be dreamed of by that officer. It is the Surgeon alone who sees, and as it were feels, the agony the wounded soldier suffers, when deprived of this luxury.

The *personnel* of this English train consists of one Sergeant Major, four other non-commissioned officers, and sixty-nine drivers—total, seventy-four persons to twenty-seven carriages, or scarcely three to each carriage; "which," adds Major D. (p. 76), "gives the smallest admissible number of supernumerary drivers." All the nations of Europe "have their own ambulance and hospital store wagons, each possessing its peculiar merit, adapting them to their respective armies."

In addition to these, the *Staff Surgeon*, while on the march, has a mule with "capital instruments" attached to his immediate service.

What ought we to do? Certainly we ought to adopt all the good which past experience has shown to exist in any of these ambulance corps, or modify them to suit the peculiar conditions of our army.

A plan has been devised by the Surgeon-General of the United States Army, and months ago was urged upon Secretary Stanton, and declined by him and General Halleck. Since the terrible sufferings, lately endured by our soldiers, and foretold in a great degree by Surgeon Hammond, that gentleman has again urged on the government the necessity of some action. The government still delays, or if it has acted officially, it is only within the past week or two, and, so far as my knowledge extends, nothing has yet been publicly done in the matter.

I well know that reports come to us through the public prints, that General McClellan is doing something about it. I have, from official sources, learned that the plans of General McClellan are, as it is thought, "insufficient. 1st, Because the drivers, &c. are simply soldiers detached for the purpose; and, 2d, the plan is not sufficiently comprehensive."

What the Surgeon-General wants, "is a corps composed of men especially enlisted for Hospital and Ambulance service, with officers commissioned purposely to command them, and who shall have the entire charge, under the medical officers, of the ambulance wagons, transport-carts, &c., and all the many departments of hospitals; a corps upon the basis of two men to each company of one hundred men, a hospital Captain, two hospital Lieutenants, and five hospital Sergeants, to be drilled, uniformed and equipped according to certain regulations. The whole should be commanded by a Hospital Commander. This is substantially the plan followed in the European armies."

Will not our government allow this, or some other beneficent plan, to be followed out?

HENRY I. BOWDITCH.

THE

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REPORT ON INTERMITTENT FEVER IN CHELSEA.

[The following Report was read at a meeting of the Suffolk District Medical Society, held October, 1852, and ordered to be printed.]

The committee appointed to report on the subject of intermittent fever, as it has been said to exist, and to have originated, at Chelsea, present the following as the facts in the case, so far as the committee has been able to learn them, after making diligent inquiry of all the physicians resident in the vicinity.

Immediately after their appointment, the committee addressed a circular to Drs. Chase, Forsyth, Otis and Toomey, of Chelsea; Buck, of Boston; French and Gould, of Malden; requesting information upon the following points:—

1st. Whether they had ever seen or heard of another physician visiting a patient affected with intermittent fever, which had arisen in the neighborhood of Chelsea;

2d. Whether they had seen or heard of any anomalous fever, or any cases of severe dysentery, in the same locality;

3d. Whether any data existed, wherefrom one could learn the hygienic effects produced by the exclusion of the salt water from a portion of the territory belonging to the Winnisimmet Village.

Subsequently, letters were addressed to Drs. Hooker of East Cambridge, Sullivan of Malden, and Poole of Chelsea, &c., and the committee have received letters from, or have had personal interviews with Drs. Buck, Forsyth, Hooker, Poole, Sullivan, Toomey, Nye of Lynn, and Reynolds of Gloucester.

The information and results thus obtained, divide themselves into three classes.

First. The physical history of the spot supposed to have given origin to intermittent fever; with an examination into its present condition.

Second. The actual facts bearing upon the question of the origin of intermittents there; also other facts relative to dysentery, to which Chelsea seems more subject than other towns are.

Third. Some reflections upon the whole subject.

On these topics and in this order the committee will proceed to give the results of their investigations.

Winnisimmet Village is chiefly built upon a hill of gravel, similar to

those found in such numbers along the coast of Massachusetts Bay. It rests on a clayey bottom, and originally (i. e., before the erection of the dam to be hereafter described), at high water, formed a kind of peninsula, the chief eminences being Mount Bellingham and the lands occupied by the United States Naval and Marine Hospitals. Continuous with it, is a chain of four or five similar though somewhat loftier hills, running to the northwest and west, so as to almost completely invest, as with an amphitheatre, a tract of marshy ground, two hundred and seventy-five acres in extent, which lies to the west of the village, between it and Malden. The accompanying map, reduced by the committee from one made for the Land Company in 1846, will show this tract ; the high-water mark showing its exact outline. On the eastern side of the village high-water mark may be in like manner seen. From these statements it will be perceived that the territory, above described as lying between Malden and the village, occupies a space quite equal to the whole of the original village lot.

In the year 1789 a charter was granted to a company, of which two eminent members of our profession* were among the chief associates, and whose object was to improve the marshy tract we have just referred to. To do this, they were empowered by the Legislature to build a dam on the spot where the present dam stands. They hoped to render the marsh capable of bearing good English hay, by thus shutting off the salt water. Accordingly the dam was built ; but like many other speculations, it seems to have been a complete failure, and after vainly endeavoring to reduce the tough salt hay to some of a milder texture and of a more luxuriant growth, the project was abandoned. In 1816 the salt water was again allowed free access to the marsh, and this state of things continued until 1845, when, under the old act of 1789, the Ferry Company repaired the dam and again wholly shut off the sea, not for the purpose of cultivating the soil, but to bring it into the market for building lots.

It would have been interesting to learn whether any malarious influences were exerted during the interval between 1789 and 1816. The committee can give no answer to the question. It seems probable, however, that no intermittent fever was actually excited in any individual: *first*, because we have no record or tradition proving that idea—and *second*, because the number of residents near the spot was very small; so that if malarious influences existed, to a slight degree, it might have failed to find an object of attack. The following statistics, given to the committee by Mr. Fenno, the agent of the Winnisimmet Company, will show the small number of inhabitants in Chelsea formerly, and their very rapid increase during the past few years. In 1822 (i. e., twenty-three years before the *second* closing of the dam) there were 3 houses and 20 inhabitants. In 1850 (i. e., five years after that closure) are 1037 houses and 7636 inhabitants. And most of this increase has been recent ; for the population, according to the census, has more than trebled since 1840.

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* Drs. Danforth and Dexter.

The present condition of the land, cut off, as we have stated, from the sea for building, is as follows. The channel of the old river, marked by the interrupted lines on the map, can be easily traced throughout its whole course. It generally contains stagnant water. This is quite salt in its taste near the dam, but the farther we go from this part, the more brackish it becomes, until finally it is nearly or quite fresh. Some of the numerous springs, which flow from the surrounding banks, are quite warm; one of them never falling, even during winter, lower than 51° F. One of the committee examined the whole marsh during the middle of a day in July, 1851, and he made the following observations upon it. He found the bed of the channel as described, in some places for a long distance containing water; in others there were simply small pools. Most of these last were composed of dirty water, covered with a filthy scum, festering under the noon-day heat. Very few of them, however, emitted any perceptible odor. None of them completely filled up the banks of the river, and these last, wherever seen, were studded with the shells of dead mollusca, which were slain by thousands when their native element was shut off from them. Some of the pools adjacent to the dam had small fish in them. Usually there was nothing but the algæ, above described, on their surfaces; and near the edges of some, a coarse kind of grass was growing. Some pools were two or three feet deep. Others were two or three inches only, while, finally, the remainder were either wholly or in part dried up. In the former case they presented the aspect of a black, soft mud, with here and there a little water just preparing to be evaporated. In the latter was found a coarse, hard-baked, fissured surface. Between the branches of the channel, the soil was of a porous, elastic nature, on which was growing, sparsely, a kind of mongrel grass, between salt and the more delicate English grass, and the surface was with much difficulty traversed by the pedestrian in consequence of the frequent changes from water to mud, &c. Very little has, as yet, been done by the Company, except that a few roads have been built, but nothing towards levelling the district; and it seems to be the intention to leave this to be done by the gradual process of building. Comparatively few houses have been erected on the Malden side, and Gerrish's block (No. 3 on map) built two years since, is the actual (1851) limit of houses on the Chelsea side. This block was, till within a very short period, the only fine brick building on the place. All the rest were small, wooden tenements. But several large ranges of brick are now in the process of erection between Gerrish's and the village. It may be safely asserted, however, that seven eighths of the tract of land is still uncovered and in the condition above described. The Grand Junction Railroad runs through its centre, and the intention of the proprietors of it is to have a station-house upon the place.

The committee have dwelt, in this full manner, upon the past and present condition of the land, because they felt that such record was necessary in order to a full comprehension of the medical topography of the district, and in order that we have accurate data wherefrom to judge of the hygienic influences that have already been exerted, or may

hereafter arise in consequence of the peculiarity of the spot—which within twenty years will probably be covered with a dense population.

We now proceed to lay before the Society the second portion of our subject, viz., the actual facts bearing upon the question of intermittent fever having originated at Chelsea, and likewise other facts relating to the existence of dysentery.

And, first, in regard to intermittent fever, the committee believe that the following observations presented by Drs. Buck, Sullivan and Toomey, fully prove that this disease, or true fever and ague, has been excited since 1845, and probably by the present condition of the land; and, likewise, that the effects of the malaria still remain. To prove this, the following cases are presented.

Case I. (under Dr. Toomey's care). A. B., æt. 21, never out of Massachusetts, or, that she is aware of, in any malarious region, resided at block marked 4 on the map; i. e., on the marsh, below the level of high-water line. Dr. Toomey saw her about May 14, 1847. She then miscarried, at the third month of pregnancy, and she continued doing well until 30th, when she was seized with a severe ague fit, lasting over an hour, succeeded by the hot stage, and finally by sweating for two hours. Dr. T. did not see her during this paroxysm, but requested to be called, if another occurred. The next day this actually happened, and patient was found complaining of chilliness along the spine, difficult respiration, acute pain in the temples and small of back; the countenance was pale, the skin dry and rough; tongue coated. A similar paroxysm continued to recur daily until June 11th. The treatment from June 2d, was a grain of quinine every two hours. On 12th no paroxysm occurred. It returned, however, on the 13th, and continued daily until middle of July, when it ceased.

Dr. T. regarded this case as one of true intermittent fever, occurring in a woman in good health before her abortion. The patient believed that her place of abode was unhealthy. Subsequently, she removed to No. 5 on the plan, but from that period she has been liable to a return of her paroxysms on taking cold. For these she uses quinine with relief.

Case II. (attended by Dr. Buck). B. C., æt. 8 years, and who has never been farther from home than Salem, and who was residing at a spot (marked 6 on plan) about fifteen rods from high-water mark, and on the old country road leading to Salem, was seen by Dr. Buck, Oct. 1, 1847. He had been languid and cold for a few days; and after two or three visits, Dr. B. learned that he had had, on the day preceding, a severe chill, followed by heat and sweat. In order to be certain of its character, Dr. B. visited the patient at the usual hour of his chill, viz., at 11, A.M. The usual appearances of a paroxysm of fever and ague occurred, two or three days. It was of the quotidian type, and the patient was quite well in the intervals. Having satisfied himself of the nature of the complaint, Dr. B. prescribed quinine and morphine. One very slight paroxysm occurred afterwards, and the patient was well in five or six days.

The committee present this as another undoubted case of intermittent, whose origin was at Chelsea, and probably from miasmata arising from the adjacent marsh.

Case III. (under Dr. Toomey). Dr. T. was riding to Malden, some time during the autumn of 1847, and while within the confines of the marsh near Malden, he was asked to prescribe for an Irish laborer who lived in a small house, situated at No. 2 (map). This house was built between two curves of the old channel of the river, and several hundred feet below the line of high water. Dr. T. learned that he had had, for several days, regularly intermittent paroxysms of chills, heat and sweat. Quinine was prescribed, with the direction that unless he got well he should call again on the physician. Dr. T. did not again hear from the patient, and no tidings could be gained of him. At the suggestion of the committee, Dr. Toomey made some inquiries about him, but he had left for parts unknown.

The committee are disposed to regard it as a case of intermittent. It is not, moreover, perfectly certain that it arose from the marsh; but inasmuch as he was a laboring Irishman, the presumption is that he had not travelled much in the interior of the country, so that the disease probably originated near the spot where he was taken with it.

Case IV. (under care of Dr. Buck). This patient was a Scotchman, æt. 30, a workman in the dye-house at Malden. He had lived near the marsh for five years, and had not been in an intermittent fever country. When taken, he was residing on the margin of the marsh below high-water mark (No. 1, map). He had been seized with chills, heat and sweats, and had been liable to them for two or three months. When Dr. Buck was called to him, he was residing at Malden, about a mile and a half from the above-named place. Dr. B. sought, in vain, for some local disease to explain his accesses of intermittent fever. It was of the tertian type. Two grains of quinine, and one quarter of morphine, once in six hours, were ordered. Only one chill occurred afterwards, during Dr. B.'s knowledge of the case. He, however, after some months, fell under the care of Dr. J. L. Sullivan, of Malden. From the letter of this gentleman, it appears that, having had a relapse from the same difficulties, the patient had finally returned to Scotland. Whilst under Dr. S., the type was the same as before, and, at times, the fever caused delirium.

These are all the cases of fever and ague that the committee have been able to hear of, that seem to have arisen from the miasm of the marsh. About three of them, there can be no doubt; and of the fourth (No. III. in the list), when taken with the others, and with the direct evidence of Dr. Toomey, there seems to be but the slightest degree of doubt.

It will, therefore, be observed that from May, 1847, until now (Nov. 1851), i. e., from within two years after the reëstablishment of the dam, cases of genuine fever and ague have occurred within or near the limits of the former marsh. The small number of cases may seem to render these results of little moment in their relations to science or public hygiene. Your committee cannot view the subject in this light, because, first, these are the only well-authenticated cases of intermittent fever, that have originated in the vicinity of Boston. In this remark the committee, of course, exclude the very interesting facts reported by

Dr. Holmes,* on the authority of Dr. James Jackson, to have occurred in Boston, and about which there may be a reasonable doubt whether it were a case of genuine intermittent fever.†

Second. These facts become interesting from the very grave suggestions they afford as to the healthfulness of the spot as a place of residence. It will be remembered that the whole has been laid out for sale as house-lots, but that, as yet, only a small part of it has been built upon. The question may arise, what will be the effect of this marsh upon the future health of Chelsea. It seems impossible to do more than speculate upon the probable result. Doubtless, when all the bed of the river has been filled, complete drainage has been established, and the land shall be covered with good substantial dwellings, the probability is that the cause of intermittent will subside; but the Society will be able to judge, as well as the committee, what are the prospects before that time. There will be many alternations of heat and of moisture, before that period will arrive. Watson‡ says these alternations, on such a soil, are most favorable to the production of fever and ague. Time alone will determine the question in the present case.

The indications in the case of any particular patient, who, in that region, tends to have any periodical attack, is undoubtedly an early removal from the town; for it will be remembered that A. B. still suffers from attacks of intermittent fever, although she removed a long time ago from the immediate neighborhood of the marsh. Similar suggestions arise from the case of the Scotchman (Case IV.).

In regard to the second part of their inquiry, viz., whether any severe dysentery has prevailed in Chelsea, and in the vicinity of the marsh, the committee have some important facts to communicate.

Dr. Toomey states that in the year, 1847, i. e., two years after the dam was closed, he saw more fatal cases of dysentery than he has seen before or since.

Dr. Forsyth, entering more into detail, writes thus:—"During the years 1848 and 9, dysentery prevailed to an unusual extent. In 1848, it seemed more fatal on the south side of the marsh than in any other part of the village. In some families, several individuals were sick at the same time, and, in one instance, three died in one family within forty-eight hours. The north side, which is in Malden, was that year exempt. In 1849, malignant dysentery visited every house, or nearly every one, bordering on the marsh on the Malden side, and was very fatal; the young, the aged, and the infirm falling victims, while the middle aged and vigorous recovered after a prolonged and severe illness. In some cases, congestion of the capillaries took place in twelve or twenty-four hours after the attack, followed by collapse and death in two or three days, without sufficient evidence of a drain upon the system to account for it." Since that time, according to Dr. F., Chelsea has been quite healthy. The same gentleman likewise incidentally states that,

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* Indigenous Intermittent Fever of New England, page 84.

† Since writing this, the committee have been reminded of a case of intermittent fever reported by Dr. W. H. Thayer, as having originated in Boston. [See Appendix.]

‡ Lectures, Am. Ed., p. 404.

though malignant scarlatina has prevailed in the higher lands of Chelsea, the low lands have been almost wholly exempt from the severer forms of it.

From these statements it would appear that, within three years after the closure of the dam, very malignant dysentery prevailed in the neighborhood of the marsh. We might possibly have inferred that such would be the fact, from similar results recorded by Dr. Holmes in his admirable treatise* already mentioned (pp. 75, 102), also that reported by Lemuel Shattuck.† Our inference would be wrong, however, if we should suppose that the malignant dysentery, described by Drs. Toomey and Forsyth, was occasioned wholly by the sudden re-closure in 1845. In table No. 1 (below) we see that in 1848 and 9, this disease prevailed throughout Massachusetts, and that in 1849 the State at large and Gloucester suffered about as much as Chelsea, and that Lynn really lost more persons by dysentery than any other place recorded in the table. An epidemic, in fact, was sweeping the State; and although, as we shall see, the dam has probably been producing, for several years past, a dysenteric atmosphere about Chelsea, the final closure of it was not the sole cause of the disease described by the above-named gentlemen.

TABLE I.

Year.	MASS.			BOSTON.			CHELSEA.			LYNN.			GLOUCESTER.		
	Whole No. Deaths.	Deaths by Dysentery.	Per centage.	Whole No. Deaths.	Deaths by Dysentery.	Per centage.	Whole No. Deaths.	Deaths by Dysentery.	Per centage.	Whole No. Deaths.	Deaths by Dysentery.	Per centage.	Whole No. Deaths.	Deaths by Dysentery.	Per centage.
1841							61	7	11.4						
1842	9544	213	2.2				100	5	5.0						
1843	10684	274	2.5				64	6	9.3						
1844	8838	120	1.3				94	8	8.50						
1845	8844	200	2.2				58	‡		200	1	0.5	121	0	
1846	9350	122	1.3	3036	52	1.6	68	11	16.1	205	5	2.4	139	1	0.7
1847	11063	410	3.7	3853	222	5.7	110	13	11.8	253	0		160	9	5.6
1848	11346	1074	9.4	3664	278	7.5	110	26	23.6	207	5	2.4	144	13	9.0
1849	20062	4580	22.8	5079	277	5.5	175	40	22.5	310	117	37.7	181	41	22.6
1850	16606	1188	7.1	3667	136	3.7	126	23	18.2	288	21	7.2	214	20	9.3
To Dec 1851							116	9	7.7	263	9	3.4	163	15§	9.2
Totals.	105337	8181	7.06	19349	965	4.9	14800	982	15.07	1726	158	9.1	1122	99	9.1

A glance, however, at the same table will show that during the interval from 1842 to 1851 inclusive, Chelsea has, with one or two exceptions, always had a vastly larger proportion of deaths from dysentery

* On Intermittent Fever in New England.
† Report of Committee on a Sanitary Survey of the State.
‡ None reported.
§ This number is doubtless too large. See Dr. Reynolds's letter on the subject.

than Massachusetts, Boston, Lynn or Gloucester. By the totals of all the years, this becomes still more manifest. From them we perceive the per centage of deaths by dysentery in Massachusetts, Boston, Chelsea, Lynn and Gloucester, compared with whole number of deaths in each. The table was made from the State and City Registrations, and from letters from Drs. Toomey, Nye and Reynolds. The committee cannot pretend that, in all its details, there may not be some errors; but, according to the doctrine of chances, these errors would not be so much against Chelsea, on all occasions, as they appear from the table.

Some may ask, whether the dam is really a cause, since dysentery seems to have prevailed before the second complete closure in 1845. The committee, however, do not adopt this view, but believe that the obstruction to the free flow of the salt water over the marsh, caused by the dam, even when imperfectly closed, has been sufficient to produce the effect. For it should be remembered that the major part of this obstruction has existed since its first erection in the last century, and that only a comparatively small outlet, through the central gate-way, has been allowed since 1818. It is evident, therefore, that very great restraint must have existed to the flow or ebb of the tide, although no positive re-closing took place till 1845. The result, at which the committee thus arrives, viz., that Chelsea is peculiarly predisposed to dysentery, suggests the importance of future investigations upon the same subject; and it is hoped that the physicians resident there will bear it in their minds during their daily practice, and report to the Society thereupon.

It would be wrong, however, to infer from these facts that Chelsea is absolutely a more unhealthy spot for a residence than other towns. There would be no reason for such an assertion. Perhaps these very malarious influences may prevent some other diseases from being so prevalent as they would otherwise become. The next table (No. 2), obtained from the sources above named, may throw some light on this subject.

TABLE II.

	Per centage of Deaths, annually, to the whole population of				
DATE.	MASS.	BOSTON.	CHELSEA.	LYNN.	GLOUCESTER.
1842	1.09	2.33	3 31		
1843	1.32	1,95	1.04		
1844	1.02	1.89	2.47		
1845	1.03	2.04	1.12	1.73	1.71
1846	1.06	2.59	1.41	1.70	1.93
1847	1.20	3.10	2.04	2.01	2.18
1848	1.20	2.84	1.65	1.57	1.92
1849	2.06	3 79	2.57	2.26	2.02
1850	1.66	2.64	1.65	2.02	2.70
Avr.ann. per cent'ges	1.29	2.57	1.91	1.88	2.07

From this table it appears that, during the period included between 1845 and 50, Chelsea, though less healthy than the State at large, was more healthy than Boston; and quite equal, to say the least, to Lynn and Gloucester. By the average annual per centage, Chelsea stands in the centre of the five.

General Summary of the Facts contained in the Report, and the Inferences therefrom.

First.—In 1789 a dam was erected at Chelsea, whereby the salt water was cut off from two hundred and seventy-five acres of land adjacent to the village. From this period until 1816, various ineffectual endeavors were made to reduce this tract to cultivation. Finally, this plan was given up in despair, and the water again allowed to overflow the land; but of course it could not do so as easily and effectually as before, owing to the fact that there was only a narrow sluice gate through which the tide was compelled to ebb and flow. In 1845 the gate was again closed, and has remained so ever since, whereby the old bed of the river and a large space of porous earth were left exposed to the rays of the sun and with a southern exposure.

Second.—It has been proved that certainly three, and probably four, cases of genuine fever and ague have arisen either on, or very near, the edge of the partially dried up marsh, and this since 1845, when the dam was finally closed. As these are the only well-authenticated cases* of indigenous fever and ague in this vicinity, and as simi-lar results from similar causes have occurred elsewhere in Massachusetts, we infer that the dam has been the exciting cause of their appearance.

Third.—Chelsea has been more liable to dysentery than other places, as far back as any statistics will carry us, and since 1845 this tendency has been augmented. From these statistics we learn that Chelsea is about three times as subject to the malady in question as Boston, and twice as much as the State at large, Lynn and Gloucester.

Fourth.—Notwithstanding Chelsea is thus subject to the influence of fever and ague and dysentery, it is not a more unhealthy place of residence than the other towns with which it has been compared. The statistics of table 2 prove this.

Fifth.—May not the curious fact that Chelsea is more liable to fatal dysentery than other towns, while, at the same time, its annual per centage of deaths to the population is only equal to, and in some respects less than, the annual per centages of these same towns; may not this fact be an illustration of the great law of compensation which governs the liability of communities and nations to disease and death? Does it not point to the inference that while certain influences tend to excite certain diseases, these same influences may check the development of others?

Sixth.—One final inference, of a very evident and practical character, the committee would make in concluding their report. It is as follows —Whenever any patient in Chelsea seems to have a tendency to diseases of an intermittent type or to dysentery, it becomes the duty of the medical attendant to think of the propriety of removing him from the deleterious influences exerted on him.

HENRY I. BOWDITCH,
JOHN WARE,
EPHRAIM BUCK.

February, 1852.

* See exceptions to this. [See Appendix.]

APPENDIX.

After this report was presented to the Society, the committee were informed of the following very important case. By the kindness of Dr. W. H. Thayer, the committee are enabled to present it, as drawn up by him from his original notes.

Sept. 30, 1850.—John Mason, æt. 12. School-boy. Eliot st. Has lived with his present guardian since six months old. Birth-place unknown. Has not been out of city over night since 2 years old. Always lived where now does, between Washington and Tremont sts.

Rather puny. Witnessed display of fireworks on 18th inst. on the common, sitting on the ground. The evening was too cool to sit in the house with open window, and there was a dense fog. The next day, having been previously well, had a chill in the afternoon, followed by heat, and that again by sweating. The next day (20th) he visited the Mechanic's Exhibition, was much fatigued, and had a more severe exacerbation of the same character than the day before.

The same attack has been repeated every day since, the chill being from 5 to 6½, P.M., followed by great heat, which ends by profuse sweating at 11, P.M. With the paroxysm comes headache, pain in neck and across small of back. At the first attack he had nausea—none since. He has lost strength and appetite, is very thirsty during heat; is up all day.

Now—Sept. 30th, 1, P.M. Up and dressed. Pale; cool; p. 70; tongue nearly clean; has no pain. During paroxysm, has some cough, which gives him a little pain in chest. None now. Nothing abnormal discovered on auscultation. Has taken a cathartic since first attack. No other treatment. One dejection daily. R. Quiniæ sulphatis, gr. jss.; acidi tartarici, gr. ⅔. M. Three times daily, avoiding paroxysm. Cold sponging during heat.

Paroxysms occurred as usual on the 30th of Sept. and first of October. On the first, without any pain in neck and loins.

On the 2d October, chill from 9¼ to 10, P.M., followed by heat till 2, A.M. Pain in neck and back severe. On the 3d October, no chill—but heat from 1 to 5, A.M. of October 4th. Quiniæ s., gr. ij. four times daily.

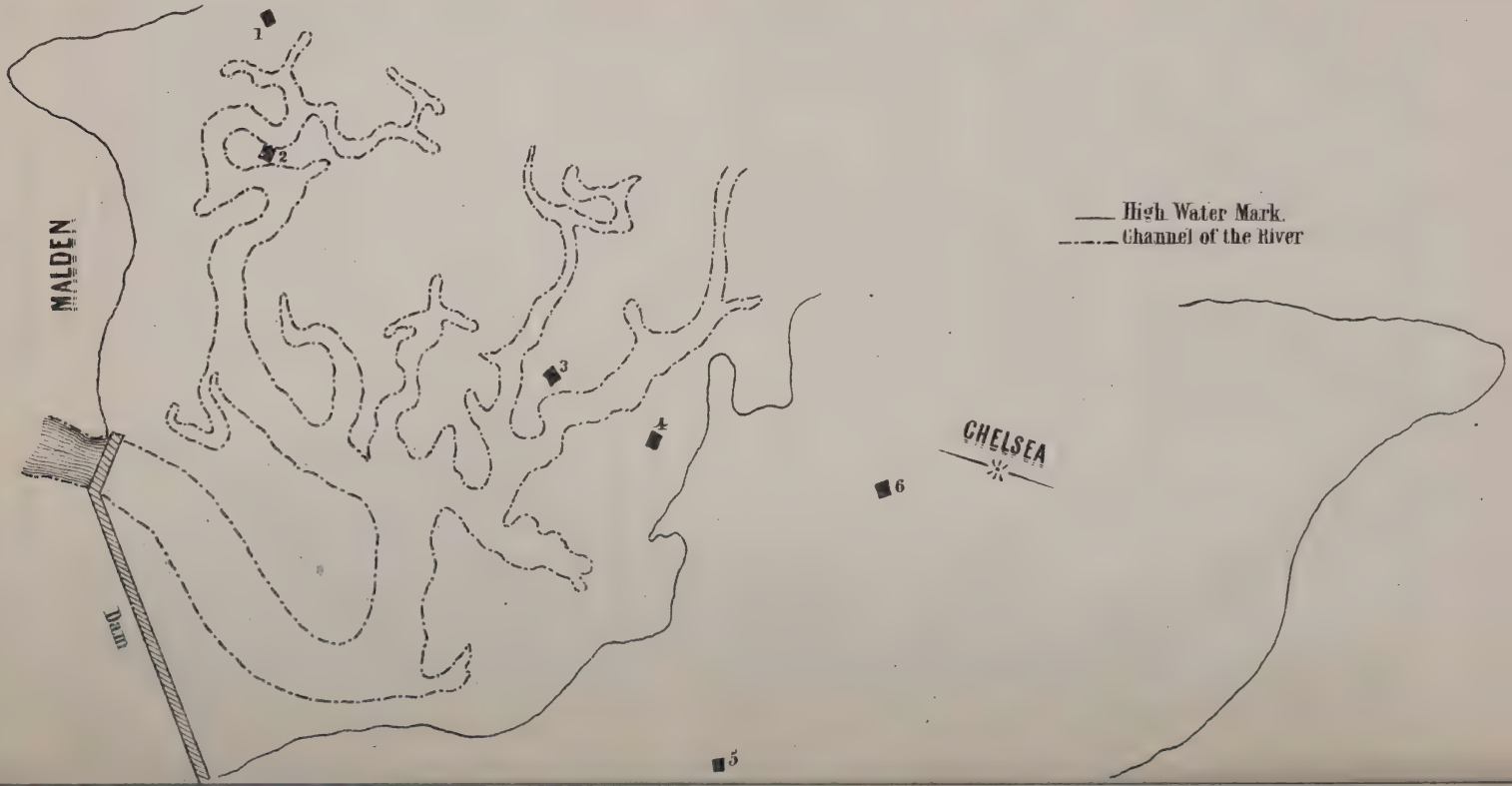
Oct. 5th.—No chill nor heat. Sweating began at 2, A.M. and was profuse.

6th.—No chill, heat nor sweat. Feels well. Spleen cannot be felt; no tenderness over it. There was some tenderness across upper abdomen at the first visit, but spleen was not searched for. One dej. daily. Pill three times a-day.

9th.—No chill nor heat since last visit. Sweats freely every night, but this is his habit. Is at school. Mother reports him very well. Omit medicine.

By the following still more curious document, brought to the notice of the committee by Dr. Z. B. Adams, we have undoubted proof that genuine intermittent fever formerly prevailed, and was quite fatal on some parts of the eastern shores of Massachusetts.

These data are extracted from a diary kept by the Rev. Noadiah


MALDEN
Dam
CHELSEA
1
2
3
4
5
6
High Water Mark.
Channel of the River

Russell in 1682 and 3, while a tutor at Harvard College. By the College Catalogue this gentleman appears to have received his degree of A.B. in 1681. He died in 1713. When writing his diary of every-day events, he scarcely could have hoped to have been the means of illustrating the history of disease in New England. The original diary, fragments of which alone remain, is now in the possession of his descendants, and has been recently published. (See Drake's New England Historical and Genealogical Register, &c., January, 1853, page 53.)

"16th day 6 month (Aug 16, 1682) * * The next day being "Fryday I went to wait on some company to Lynspring where for com- "pany's sake drinking too much cold water I set myself in an ague wch "came again on Sabbath day and Tuesday.

* * * * * * * * * * *

"10 6 (Aug. 10, 1683) Samuel Gardner a student of ye College, of "2 years standing prompt for learning exemplary for piety and So- "briety died at Salem of ye feaver at which time many were visited with "ye feaver and ague which was very mortal."

DR. CARPENTER'S VIEWS OF THE RESPIRATORY FUNCTION

BY E. LEIGH, M.D., TOWNSEND, MASS.

[Communicated for the Boston Medical and Surgical Journal.]

Dr. Carpenter is one of the few and more recent physiologists (referred to on page 437 of this Journal), who have freely extended their comparisons into the inferior divisions of the animal kingdom. The earlier editions of his works on "comparative" and "human" physiology were marked by this characteristic, and are indebted to it for much of their merit. Yet, after all his comparisons of the higher and lower animals, he treats of this function merely as a calorifying and decarbonizing process. He barely *alludes* to the fact that oxygen is also necessary to give the blood its power to nourish and stimulate the tissues—that, without it, this fluid is not fit for its normal action.

But in the third edition of his "Comparative Physiology," 1851, he has availed himself much more largely of the respiratory phenomena observed among all organized beings, and his conclusions correspond to a considerable extent with those of the essay on this subject recently published in this Journal.

He shows (§ 441) that the "crude aliment must be exposed to the air before it is fit for its ultimate purpose," and that which has once passed through the tissues must undergo a similar process to restore it to its proper condition;" that the "presence of oxygen is necessary to the active performance of the animal functions by the nervo-muscular apparatus;" see also § 451—that it is "essential (§507) to the changes of the tissues in the development of muscular force and nervous energy"; and is "one of the conditions (§235) of muscular contraction"; see also §236.

In §§67, 494, 509, and elsewhere, he treats very *fully* upon this sub-

ject, showing that oxygen has a direct and most important agency in the processes connected with the growth of the tissues, their decay and reconstruction, as well as with the development of muscular and nervous activity (why not of *all* vital action ?)—showing also that its presence and influence is necessary to the generation and transformation of the organic compounds contained in the circulating fluid and constituting its nutrient material, and he refers to the conversion of starch into sugar, and of albumen into gelatine, as instances. Speaking of this use of oxygen, he considers it (§67) as properly entitled to the name of *food.*

Such views of the nature of the respiratory function are of the highest importance, and will be more fully developed in their scientific and practical relations, as the functions of all animals are more extensively and thoroughly investigated—the phenomena, thus observed, more carefully compared—and their significance more deeply studied, in their relations to life, health, disease, and restoration.

OSSIFICATION OF THE PLEURA.

[The following letter from a medical gentleman in Maine to one of the Professors in the medical school of this city, will be read with interest by the profession, though incomplete as a report of the case pathologically described, on account of its history not being also given. The writer pays a merited tribute to the zealous efforts of the faculty of our medical college, to thoroughly instruct those who attend their lectures. —Ed.]

Sir,—Is the pleura often the seat of ossific deposit ?

On the fifth day of this month I was called upon to make a post-mortem examination of a patient who, it was said, had been for several years laboring under an organic affection of the heart. Upon removing the anterior parietes of the thorax, I at once perceived that the left cavity of the pleura was enormously distended with some kind of fluid. The heart was pressed far out of its proper location, and occupied about the same position on the right side as when in a healthy state it should have done on the left. By a careful and tedious process of dissection, I was enabled to break up the adhesions and separate the pleura costalis from the ribs on the left side, and from the diaphragm below, and remove the sac entire from the thorax. After its removal I found the lung belonging to that side attached and strongly adherent to the superior and internal part of the sac. The lung was nowhere more than one and a half inch thick ; was entirely impervious to air, and completely, throughout, *hepatized*, or, perhaps, to speak more scientifically, *carnified.* Its circumference of attachment to the distended pleural sac was in diameter about four by five inches. The sac was everywhere very much thickened and very firm and strong, and had upon its inner side a deposit of what I supposed to be coagulable lymph in an inorganized state. This deposit was thick all over the inner surface of the sac, being about one line in thickness. I had no means of applying to this deposit the microscopic test, so that I am unable to speak with certainty as to its nature.

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BOSTON MEDICAL AND SURGICAL JOURNAL.

VOL. LXV. THURSDAY, NOVEMBER 21, 1861. No. 16.

DOUBLE ANEURISM OF THE AORTA, COMPRESSING AND DESTROYING THE LEFT PRIMARY BRONCHUS, AND CAUSING A PECULIAR AFFECTION OF THE LUNG.

[Read before the Boston Society for Medical Improvement, Sept. 23d, 1861, by HENRY I. BOWDITCH, M.D., and communicated for the Boston Medical and Surgical Journal.]

G. W., a stout-built, American, locomotive engine-driver, I saw, March 19th, 1861. His history was as follows:—Always well, that is, no long illness or accident to prevent work, until four years ago, when he was severely injured in the chest while drawing a locomotive. He was not long confined after this, and soon resumed his usual labor, but he had never been exactly as well as before, and at times there had been a feeling as of a "football" in the epigastric region. For two years this state of things continued, not constant, however, and during all this period he was at work daily as before. Then a hard, dry cough commenced, which had continued to the time of my visit, when it was violent, ineffectual and excessively exhausting to the patient, and distressing to his friends, and without expectoration, except of the most trivial, white, frothy character. A year ago, he had "asthma," so called, obliging him to sleep with the windows open. Of late less of that, but a more permanent dyspnœa. Four months before my visit, he had what was called "lung and typhoid fever" by the attending physicians, since which he had been prevented from all work by an aggravated cough and great dyspnœa, especially on any exertion, and when lying in certain positions. The easiest posture, latterly, had been the sitting one, with the forehead bent over, and resting with his face horizontal upon his hands, supported by a cane. With this state of things came on an œdematous condition of the face, and, to some extent, of the limbs, at times. He had had pains, more or less, in the middle and small of the back. He had not complained of palpitation. His appetite had been poor, but bowels regular. At times there was retching, from the severity of the cough, but never vomiting. The urine had been high colored, with a red sediment, since the fever. He had had no regular hectic, though there was copious sweating after the

severe straining paroxysms of cough, and varying like them in frequency, from once every half hour to once in twenty-four hours. At my visit he appeared like a man above the usual size, tall, large, well-formed. His countenance had a puffy, pale look; not anxious, but evidently every breath was a labor to him. The cough was loud, painful from its length and severity, and without relief. It seemed to cease from the fatigue of the patient, often, at times, lasting ten or fifteen minutes, without having accomplished any expectoration. It was not crowing, or precisely hoarse in its tone. The least exertion evidently increased the labor in breathing; speech even increased it. The pulse was 100, regular and small, not evidently different in the two wrists. The tongue was healthy. He complained chiefly of trouble in the left breast. No swelling of feet.

I examined the physical signs on two successive days, and at the last examination Dr. Ellis accompanied me, and made an independent diagnosis. We both came to the following diagnosis and prognosis:—large aneurism of the aorta, about the arch and descending portions, interfering with, and causing the disorganization of, a large part of the left lung. The right lung is healthy, apparently. No evidence of valvular or other lesion of the heart, but dislocation of it outward and downward. Prognosis, death.

Our reasons for these opinions were the above-named rational, and the following physical signs.

Inspection.—A peculiar fulness and rounding out of the whole contour of the neck, seeming as if it were stuffed out. The vessels were manifest, and the larynx and sterno-cleido muscles were not in the least perceptible. The chest likewise was full, but without local prominence, save perhaps in a slight degree about the left clavicular region. The apex of the heart was seen beating low, and under the axilla.

On *percussion*, there was a small space about the aortic region, over the sternum, where there was a slight dulness, but a clear pulmonic sound elsewhere in both breasts. Behind, the percussion was flat at the left of the vertebral column, and to the width of three or four inches from top to base of chest. Clear resonance under axilla, even to base, or nearly so.

Auscultation.—Strong bronchial respiration was heard in the upper third of the left lung, with obscurity of respiration elsewhere, *even in parts resonant.* At the first examination there were loud "consonating" râles where bronchial respiration was heard in front, and they were caused by the motions of the heart being synchronous with the movements of that organ. They were not heard subsequently, at two examinations.

Cardiac and Aortic Physical Signs.—No *marked* prominence about aortic region, but the heart was seen pulsating two or three inches outside and below the usual spot. Its impulse and sounds were not unusual. But over the aortic region was an impulse, evident,

with a strong bellows-murmur. This murmur was heard very strongly in the left back. There were no morbid sounds over the right lung, front or back, save puerile respiration, and the transmitted aortic bellows-murmur.

A preparation containing digitalis, colchicum seeds and acetate of morphia was given as a placebo, and with the faint hope of giving a slight ease from the constant dyspnœa. Tincture of gentian, as a stomachic, was also allowed.

On March 24th, i. e. three days subsequently, I saw him again. He had been easier, and had been able to lie on the right side. Could not easily sit erect, or attempt to lean forward without severe pain seizing him all around the waist, for a space about three inches in width. The cough had been severe, and he had raised, for the first time, a little blood.

From this he continued about the same, until April 2d, i. e. nine days subsequently to my last visit. On this day he had a sudden copious hæmorrhage, estimated at one or two pints, under which he fainted. Eleven days afterwards, another hæmorrhage, still larger, occurred, and he was found weltering in his blood, and *in articulo mortis*.

Autopsy by Dr. Ellis, about twenty-four hours subsequently. Body large and pallid. Much œdema of the cellular tissue everywhere. From four to six ounces of serum in the pericardium. The heart was pale, but normal. The first inch and a half or two inches of the aorta were dilated in such a manner that shallow pouches were formed. The next five inches were largely dilated, the vessel here measuring nine inches in circumference. Within, were layers of fibrin, with a maximum thickness of one inch, but gradually blending with the lining membrane, with some smaller and thinner deposits of the same character. Beyond this dilated portion, the vessel was about the usual size, and continued so for an inch, when it again dilated, forming another pouch, about two inches in diameter and an inch in deph. Both of these had compressed, and finally opened into, the left primary bronchus, of which a portion, an inch and a quarter in length, and involving nearly the whole circumference, was destroyed. The edges of the opening were very irregular; and the base was formed by the light-colored coagulum previously described. The communication with the smaller aneurism was established by a small opening near the other. A portion of the surface, from a quarter to half an inch in diameter, of one of the secondary bronchi, was also deeply ulcerated, but not by the immediate action of the aneurism. There was a marked depression in the vertebral column behind the enlarged vessel, presenting the usual appearances of eroded bone.

The left lung was not seen on raising the sternum. The pleural surfaces were firmly united by thick false membrane, rough over a portion of the surface, and not very dense, but at the apex and posterior part very thick, firm and fibrous. At the apex it formed

the walls of a cavity upwards of an inch and a half in diameter, filled with serum, and lined by a delicate reticulated membrane. The lung was eight inches long, and four wide. It was generally of a dark-gray color, and quite dense, though some parts contained air, but not enough to cause crepitation. The elasticity was most marked on the side and back. Scattered throughout its substance were irregular, dull-yellow portions, of all sizes, from that of a mere point to that of a pea. At the time of the examination, there were apparently many small cavities filled with pus, but after thoroughly washing the part these were not so obvious. The appearances, however, were unquestionably owing to inflammation. The bronchia and bloodvessels were everywhere seen upon the cut surface. The former were filled with a bloody fluid. The inner surface of the smaller bronchia was covered with a thick yellow material, partly composed of degenerated epithelium. It was about the extremities of some of these that the lung appeared to be particularly diseased.

The vessels seen did not contain coagula, and were in appearance healthy. The same was true in regard to the branches arising from the arch of the aorta. The bronchi were full of bloody fluid.

The right lung was enormously hypertrophied, and did not collapse, either when removed from the chest or after incision, small portions, even, showing this peculiarity. It was elastic, and crepitated throughout.

Scattered throughout the lung were numerous, small, deeply-injected spots, which contrasted strongly with the adjacent tissue.

The spleen was large and dark; the kidneys were dark, but normal; the intestines appeared well.

Remarks on the Case.—It had been deemed a very obscure one up to the time of my visit. Yet on a thorough examination of the symptoms and of the physical signs of the lungs and heart, it seemed impossible to make any other diagnosis than that to which we arrived

Dr. Ellis was materially aided in making up his mind by a series of similar cases reported by him in this JOURNAL, Dec. 4th and 11th, 1856, and to which I would call attention. They prove that "inflammation and abscesses of the lung" may occur, when from any cause a primary bronchus is obstructed.

DR. WARE'S LECTURES ON GENERAL THERAPEUTICS.

LECTURE IX.—(Concluded fsom page 309.)

IN chronic diseases, though the essential principle upon which the regulation of the diet is to be managed is the same as in acute, yet the greater variety of the conditions they present render its regulation more complicated. First of all, the selection of the

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BOSTON MEDICAL AND SURGICAL JOURNAL.

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CASE OF ANEURISM OF THE LEFT VENTRICLE OF THE HEART.

[Read before the Boston Society for Medical Improvement, November 18th, 1861, by HENRY I. BOWDITCH, M.D., and communicated for the Boston Medical and Surgical Journal.]

NOVEMBER 17th, 1860, called on Mrs. ——, æt. 58. She had formerly had many rheumatic attacks, but she had never been confined by them, except during a severe access, lasting three weeks, twenty-five years ago. Usually her health had been perfect. She had been the mother of several children, and had always been a woman of remarkable energy, and full of activity of body and mind.

Her disease, for which I was consulted, commenced in June, 1859, with an attack, lasting two weeks, marked chiefly by distress about the sternum, and pain in the left arm. During this attack, she was able to lie with her head low, and did not have palpitation. Subsequently she was able to go about, and attend to her ordinary avocations, although occasionally she had the same trouble in the left arm.

In March, 1860, i. e. nine months from her first attack, she was going South, to attend upon her sister, who was ill ; and at Baltimore, she had, in the night, a sudden and violent attack of distress in the left chest, with vomiting, and towards morning great dyspnœa, an harassing and incessant cough, and finally copious hæmoptysis, mixed with sputa. She was treated homœopathically. In five days she recovered so far as to be able to proceed farther South, where she staid four weeks, feeling quite well, and without palpitation or dyspnœa, and being only a little weaker than usual. On her return home, and while passing through New York, she had another, briefer, but more suffocative attack during the night. By sitting up in bed she obtained relief, and was able to return to Boston the next day. She was, however, never anything but an invalid from that epoch. In a few days after her return, she had another violent attack, that prevented all horizontal posture for forty-eight hours, accompanied by severe pain in the left side, and, finally, homœopathy giving no relief, she was restored to comparative ease by the application of Baumsheid's needles, and croton oil over the heart.

She visited the White Mountains, and remained there during the

summer. Restless nights and palpitation were, during all the time, almost constant, with inability to lie on the right side. She had never had swelled feet. Her digestion had been good, and she was not troubled in the chest after food. Diarrhœa she had always been subject to, subsequent to an attack of dysentery several years before. She had had no cough. The urine had presented no unusual aspect, and, on chemical examination, seemed normal. She was, at my visit, a little thinner than usual, and had occasional giddiness on stooping. She was sitting up, and had evident dyspnœa, but conversed readily. The physical signs were as follows. A heaving impulse of the heart over a very large space. There was a slight bellows-murmur over the aortic valves and right cavities; but over the left, the greatly enlarged dulness, out far beyond the nipple, and the impulse, were the only marked signs. In the left back, at its lower two or three inches, were flatness and broncho-ægophony, with fine crepitus on full breath. My diagnosis then was, enormous hypertrophy of the heart, chiefly of the left cavities, congestion of the lower part of the left lung, and probably slight pleuritic effusion. I ordered digitalis, gr. ss.; colchicum seeds, sodæ bicarb., aa gr. i., three times daily. Iodine, ʒ ss.; ether, ʒ i., to left back, and over heart.

Under this treatment she instantly began to improve, and was able to lie down easily at night, instead of sitting bolstered up, as she had been previously to my call, but the pills proving too laxative, the colchicum was reduced to a fourth of a grain, and a grain and a half of kino substituted for the soda.

She continued this treatment, steadily improving, until Jan. 9th, 1861, that is, for about six weeks. At that time, it was reported that she was able to go up and down stairs once daily. Looked and felt much better, and had lain down with comparative ease at night. Complained most of weakness. Pulse 72, regular and quiet. The heart was less heaving, and apparently rather less dull. Respiration behind was freer, though there was still some bronchophony and crepitus. To drive out daily. Use Blancard's pills morning and night. Digitalis, &c., p. r. n.

Jan. 27th. Râles much less, and continued improvement. Sherry wine.

About this time she had an attack of severe coryza and cough, lasting, however, only a few days. The sherry wine did not suit her, and it was omitted. For nearly two months, until March 26th, she was getting more comfortable, going up and down stairs occasionally; always, however, with some difficulty, and her nights were more or less uncomfortable. Valerian and assafœtida were ordered at different times, with relief.

In April, she had pain in the right side, not, however, inducing serious trouble. She had for the first time some œdema of the ankles, but no fluctuation of the abdomen.

Towards the latter part of April she had sleepless nights, and

more cough, and râles appeared in the lower half of the right back. Under this she was much more ill, and, the dyspnœa being extreme, I allowed her to inhale ether. This gave relief at night; but gradually she continued to use it, and finally chloroform was requested, and allowed through the entire day and night. She felt she was dying, and I could not promise that she would be better. At length, she lay constantly like one intoxicated, with the ether always at her nostrils. Enormous quantities were thus used, until, in consequence of her mental and physical state, I was obliged to take it wholly away. Under this deprivation she became nearly frantic, and the mind did not recover its balance for nearly twenty-four hours. Gradually she again partially recovered, so as to drive out, and moved into the country.

During the subsequent months, until her death, she always had more or less dyspnœa, obliging her to sit up at times in bed, leaning forward. This attitude became constant, at last. Valerianate of morphia, conium, &c., were used, with varied relief.

The urine, examined in the early part of the disease, was not albuminous, but became so at last. The feet and eyes and face were much swelled. The mind became quite dull, though easily roused, for two or three weeks before death. She was constantly sitting up, with the head leaning forward. The physical signs about the heart never altered materially. August 15th, she died.

At the autopsy, we found considerable evidently recently-effused fluid in the right pleural cavity. The corresponding lung was inflamed, red, and gray at its lower part, and healthy above. The left pleura contained a little fluid. The lower lobe of the lung was collapsed, flesh-like and without air; the upper was healthy.

The pericardium was adherent over the left ventricle by thin, old, white bands. This ventricle was very large, owing to a round prominence, of the size of a large orange, three and a half inches in diameter, communicating by a round, smooth aperture, an inch and a half in diameter, with the ventricle, and filled with coagula, stratified, as in an arterial aneurism. These strata were close to each other, and quite firmly adherent to the walls of the sac, which walls, over the greater portion of their extent, were very thin, and seemed composed almost, if not wholly, of the pericardium and a thin false membrane. The walls of the ventricle, near the base of the heart, were nearly an inch thick, with a layer of fat, half an inch more, superadded; but they rapidly grew thin towards the mouth of the sac. All the valves, and the other cavities, were healthy.

Liver congested, of medium size. Spleen small. Both organs apparently healthy. Kidneys small, and somewhat granular. Stomach and intestines contracted, not otherwise peculiar.

Remarks.—The peculiarity of this case was its morbid anatomy, viz.: its real aneurismal sac, which projected from the left ventricle of the heart. During life there was no symptom to lead me to

suspect anything more than enormous hypertrophy of the left ventricle. With this came attacks of dyspnœa, congestion of the lungs, of the kidneys, and finally albuminuria, symptoms often seen in other cardiac diseases. But the specimen is, I believe, unique in its dimensions, though not in its character, a few such cases having been noticed.

Rokitansky (*Path. Anatomy*) says, aneurism of the heart occurs usually in the old, and is owing to inflammation and softening, and gradual distension of the parietes. According to him, the sacs vary from the size of a pea to that of the fist. They are generally in the left ventricle.

According to Dr. Austin Flint (*Diseases of the Heart*), it is a very rare affection. Dr. F. alludes to Mr. Thurman's paper (*Med.-Chirurg. Transactions*, London, 1838), in which Mr. T. has collected 74 cases; and also to Dr. Bellingham (*Diseases of the Heart*), for the literature of the subject. Hope (*Diseases of the Heart*) has an admirable chapter on it. From these various papers it would appear that our case is one of the more remarkable class for the size of the sac. It is like others in not having been differentially diagnosticated.

In regard to treatment, I would state that although no cure could be accomplished, much relief was obtained during the first few months by digitalis, &c., and subsequently by ether, &c., as palliatives.

DR. COALE'S ESSAY ON ANEURISM.

(Treatment.—Continued from page 269.)

We first exhibit *all* these methods, and for convenience classify them as follows:—

I. Constitutional treatment.

II. Treatment directed to the sac.
- Styptics and refrigerants.
- Compression.
- Manipulation.
- Suture.
- Incision and plugging.
- Cauterization
  - Actual cautery.
  - Caustics.

III. Agents within the sac.
- Galvano-puncture.
- Injection of styptics.

IV. Means directed to the artery.

1. Above the sac.
- Ligature.
- Compression.
  - Mediate.
  - Immediate.
- Seton.
- Plugging.
- Acupuncture.
- Torsion.
- Bruising.

2. Below the sac.
- Brasdor and Wardrop's method of ligation.

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[Extracted from The American Journal of the Medical Sciences for January, 1863.]

PARACENTESIS THORACIS;

A RÉSUMÉ OF TWELVE YEARS' EXPERIENCE.

BY

HENRY I. BOWDITCH.

(Read before the Boston Society for Medical Observation.)

In the *American Journal of the Medical Sciences*, April, 1852, I published an article on Paracentesis Thoracis, with cases. In January, 1854, I gave in the *American Medical Monthly* an analysis of twenty-five cases of the same. Still later I made further statements on the subject in the *Boston Med. and Surg. Journal*, 1857, and now I wish to give to the Society a brief *résumé* of the principal results of the operation, as performed 150 times on 75 persons during a period of nearly twelve years, viz., from April 17, 1850, to Dec. 17, 1861.

During the above period I have operated 150 times on 75 persons, and have seen other gentlemen operate on 10 more, making 160 operations on 85 persons.

Innocuousness of the operation.—I have never seen the least *permanent* evil resulting from any operation, and *only the slightest temporary* difficulties, such as pain, slight dyspnœa, stricture, or cough, &c. This, I think, shows the innocuousness of the operation by means of the exploring trocar and suction pump, as suggested by Dr. Wyman.

Frequency of the operation.—One lady (case formerly reported) I tapped 9 times during 8½ months; commencing when she was 4½ months pregnant, and in whom the orthopnœa was, several times, so great that death, I have no doubt, would have supervened within twenty-four hours, if the operation had not been performed. She is now tolerably well, but with a contracted chest, as is usual in chronic pleurisy.

In striking contrast with this case, as it regards the *frequency* of the operation, while resembling it in the number of times it was performed, was the unique case of an elderly man, very recently under my care, and in which I tapped eight times in six weeks! The patient himself, a physi-

cian, earnestly and even solemnly demanded of me the operation as a mere means of relief to intense distress. As he jocosely remarked on one occasion, he considered it one of his "luxuries."

Cases in which the patient recovered wholly.—Twenty-nine out of the seventy-five patients got wholly well, apparently in consequence, chiefly, of the operation. The operation was performed generally when severe symptoms were manifest, and I was called in consultation. In a few, a great quantity of fluid was recognized by the physical signs alone, the rational having been slight; but, as the disease was chronic, an operation was deemed necessary. In all these cases, the operations seemed the *first step* towards a cure.

The character of the fluid and its influence on the prognosis.—In 26 out of the 75 *serum* was found; and 21 of these patients got wholly well. If after the first operation the fluid becomes purulent, an almost certain fatal prognosis should be made. I have seen six such cases. Four of the patients died, two were lost sight of, but, when last seen, were failing.

Pus was found at the *first* operation in twenty-four cases. Once, it was of the consistence of honey, but I easily drew it through the exploring tube. Seven of these patients recovered wholly; seven died; nine were relieved one or many times; but they had either a long and tedious illness, terminating usually in phthisis, or a fistulous opening, or a still doubtful result.

A *sanguinolent fluid* at the first puncture (and by that I mean a dark red thin fluid, evidently stained with blood, though not coagulating) I consider almost certainly fatal, and a consequence of some malignant disease of the lung or pleura.

There were seven of such cases. In six the patients died. In one there was a doubtful result, but apparently fatal tendencies were commencing. If the fluid is found sanguinolent at the second or any subsequent puncture, I deem it of comparatively *little* importance towards the prognosis.

A mixture of *bloody purulent fluid* at the first operation is usually fatal. Three cases, all fatal, occurred.

A *fetid gangrenous* fluid is very rare, only one case having occurred, and that fatal; but in this case infinite relief from horrible orthopnœa was obtained, and it never returned, though the patient sunk and died in a few days. Gangrenous pleura was found.

I have operated once in *pneumo-hydrothorax* with temporary relief and comparative ease for several days. Many theoretical objections may be urged against the operation in such a case. To such objections I have simply to answer that, as the operation can do no harm and may give much relief, I shall operate again in any case where the dyspnœa may be so great as to require it.

Cases where no fluid is obtained.—Finally, in seven cases I got no fluid. These cases occurred usually in the earlier operations, and the failure was

often owing, I have no doubt, to the cautious and slow manner with which I plunged the trocar between the ribs, carrying thus the false membrane of the pleura costalis before the instrument instead of piercing it; so that a valve was really formed over the end of the canula. At other times I have little doubt that an error of diagnosis was made, and that instead of a fluid there was simply an unexpanded lung and thick false membranes on the pleura, causing as much dulness on percussion and absence of respiration as a fluid would have done. The differential diagnosis of the two was not, at first, quite so easy as it is now. Inspection usually is the test between the two conditions; the intercostals being distinct, and depressed when a membrane exists; but very indistinct and level with the ribs, or, possibly prominent, when a fluid occupies the chest.

Once an immense tumour occupied and uniformly distended one pleural cavity, and in its course presented all the phenomena, natural and physical, of simple pleurisy. I tapped three times, viz.: at the back, side, and front, at the same visit. No evil followed.

A member of this society asked me my experience as to the good results or otherwise in operations on the right side; observing, at the same time, that one European writer (Trousseau?) contended that pleurisy of the right side is often or always tuberculous. I could not answer definitely, although my impressions were against the truth of the assertion. On referring to the brief summaries, and not to the original notes of my cases, where I find the sides named in 25 cases, I find that in these the operation was performed with the following results:—

	Pleurisy of	
	Right side.	Left side.
Death	4 times.	5 times.
Cure entire, without symptoms of phthisis, except in one, but pleurisy was cured in that	9 "	4 "
Doubtful result	1 "	2 "
	14	11

These data do not exactly answer the question proposed; but if tubercles always or more frequently exist in pleurisy of the right side, we should, *à priori*, anticipate more unfortunate terminations of the operation of paracentesis of the right than of the left side. My experience proves exactly the reverse, and may be expressed, if deduced from the above table, as follows:—

Of 25 cases, 14 were of the right side, 11 of the left. Of the 14 of the right side, only one person is mentioned as having tubercles, and in that the pleurisy was cured and the pulmonary symptoms mitigated.

Of the 14 persons tapped in right side 28.57 per cent. died; 64.28 per cent. were cured, and 7.14 per cent. remained doubtful. Whereas, of the 11 cases of the left side, 45.45 per cent. died, 36.36 got well, 18.18 were doubtful.

In other words, twice as many have got well from tapping the right as the left; and only half as many have had doubtful results from operations on the right, as in those where the left side has been tapped.

Hereafter, if my cases are any criterion wherefrom to judge, I shall regard an operation on the right side as much more favourable than one on the left; which I can hardly think would be the case were all right side pleurisies tuberculous.

When shall we operate?—Experience teaches me to operate in every case, however recent or chronic may be the attack, provided there is permanent or occasional dyspnœa of a severe character, evidently due to the fluid. I have, of course, more hope of doing good where the disease has not been of too long duration; is uncomplicated with phthisis, or any other disease, and where, moreover, the amount of fluid seems directly the cause of the trouble. I also deem it best to operate in *any*, even latent cases, where the pleural cavity gets full of fluid; and if, after a reasonable amount of treatment, the fluid does not diminish.

Where shall we operate?—The point originally chosen by Dr. Wyman and myself, viz.: in a line let fall from the lower angle of the scapula, and between the 9th and 10th ribs, I deem the most appropriate point at which to make a puncture. I have, however, tapped under the axilla, or in the breast, where the case seemed to require it. In selecting the precise intercostal space, on the back, I usually choose one about an inch and a half higher than the line, on a level with the lowest point at which respiratory murmur can be heard in the healthy lung of the other pleural cavity.

I never wait until *pointing* commences; for then I am sure that pus will be found. If *pointing* without opening has commenced, I do not necessarily tap in that place, as recommended by the older surgeons, but seek the most depending point in the chest. While thus desiring to operate before a *local* distension shows itself, I dislike or refuse to tap where there is contraction of the intercostal muscles; and I am certain of getting fluid only where there is distension or flattening of the same.

Objections to the operation.—One word on the objections to the operation: "We may puncture the lung." "We may let air into the pleura." "We may by our strong suction injure the lung." "The instrument often fails to operate." "The connecting tube between the pump and the trocar collapses, and thus checks the flow of liquid." "The liquid may be too thick, and cannot be drawn through the small canula." "We may excite inflammation of the pleura." "The operation is useless, because non-tubercular cases will get well without; tubercular will die in spite of it," &c. &c.

One and all of these objections are to me, with the experience I have had, simply absurd. Let any man have good instruments and manage

them skilfully on proper cases, and he will agree to the truth of what I state.

The operation, like everything else in all the departments of human life, is imperfect. It cannot cure all. But it has relieved many, and will continue to do so, if surgeons will use it; it has been the prominent cause of relief in many more, and will be so hereafter, if men will theorize less and act more. It has been the sole means of saving life, I am sure, in a few of my cases; and I know some patients have died within the last few years, in New England, as I believe, for want of it, under the care of others.

It is certainly innocuous, and gives so little pain, compared with the relief that it affords, that patients have begged for it to be repeated again and again, as a mere matter of relief. In my opinion it ought never again to be allowed to fall into disuse by the profession. I regard any man who allows a patient to die of dyspnœa from pleuritic effusion, however great may be the complications with other diseases of head, chest, or abdomen, as in the dilemma of him who is either wilfully neglectful of some of the means of relief or cure, now by experience proved to be always at hand, or ignorant of the simple and beautiful operation suggested by Dr. Wyman. To a certain extent I deem my connection with the operation somewhat providential. I had seen, in the earlier years of my practice, men die with sudden dyspnœa, or, after months of obscure disease, die with one pleural cavity filled with serum, and not a particle of other disease; and, finally, I have seen tubercular phthisis follow, after months of debility, from what was simple pleurisy at first.

Having no surgical tastes myself, shrinking from the simplest operations, and doing nothing of the kind save when compelled to do so, I at times urged surgeons to operate. They declined, and men died. Finally, in cases where I had control, I took the responsibility, and asked the surgeons to do the manual they were more accustomed to than I was. Their plan was incision and dissection down to the pleura, and a suppurating wound as a consequence, a long, painful operation. At last Dr. Wyman's instrument and method came to my notice. I seized upon them as those I had long sought for. As Dr. Wyman and I were the only believers in the operation, it devolved often upon me. The result is the experience which I have given above. And now, as I have often said, I would as readily puncture the chest as I would draw a tooth, or vaccinate a child.

Boston, Nov. 1862.

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